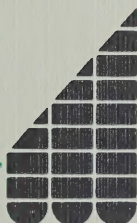
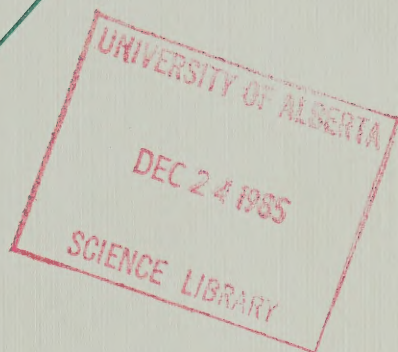




# Building for the Future



The 1985

**Annual Report** of

The Agricultural

Experiment Station

Michigan State University

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**The 1985  
Annual Report of  
The Agricultural  
Experiment Station  
Michigan State University**

Michigan Agricultural  
Experiment Station  
***Building for the Future***

**R**eport prepared under the direction of Robert G. Gast, director of the Michigan Agricultural Experiment Station, and administrative associate Doreen Woodward. Design by Terry O'Connor; editing and production by Laurie Wink, information coordinator, ANR Information Services.

## Positive Steps Forward

**T**his has been an exciting year for the Michigan Agricultural Experiment Station (MAES) in terms of several important personnel changes, facility improvements, new program thrusts and budget and program planning activities.

Michigan State University made a number of very significant administrative appointments that are of major importance to the Experiment Station. These include:

- John A. DiBiaggio, appointed July 1 as president of MSU.
- W.J. Moline, appointed September 15 as director of the Cooperative Extension Service.
- James R. Fischer assumed the responsibilities of MAES associate director March 1.
- Jack Preiss was appointed chairperson of the Department of Biochemistry on May 1.
- Eldor Paul was appointed chairperson of the Department of Crop and Soil Sciences effective September 1.



- Lawrence Fischer was appointed director of the Center for Environmental Toxicology effective September 1.
- Hans Kende was named director of the Plant Research Laboratory effective September 1.

In addition, we have filled a number of MAES related faculty positions with outstanding scientists. The Clinton E. Meadows Chair in dairy science was recently funded and recruitment efforts have been initiated.

Two new campus based organizations—The Food Industry Institute and the Travel, Tourism and Recreation Resource Center—were established with administrative ties to the College of Agriculture and Natural Resources and with major involvement from the MAES as well as the Cooperative Extension Service (CES).

Progress is being made on construction of the Plant and Soil Sciences Building, which will house the Departments of Crop and Soil Sciences and Horticulture upon completion in 1986. The new dairy facilities at the Kel-



logg Biological Station, made possible by a grant from the Kellogg Foundation, were completed and dedicated on August 28.

In addition to these developments, 1985 will be remembered as the year the Experiment Station and the Extension Service initiated a major five year planning effort conducted under the leadership of Bernard Knezek representing the MAES and Mary Andrews representing the CES. The effort included an in-depth analysis by a 23-member committee of current programs and identification of research and extension priorities for the next five years. The plan will be used both as a guide for the use of existing resources and as a basis for requesting additional resources to meet the needs of Michigan agriculture and natural resources.

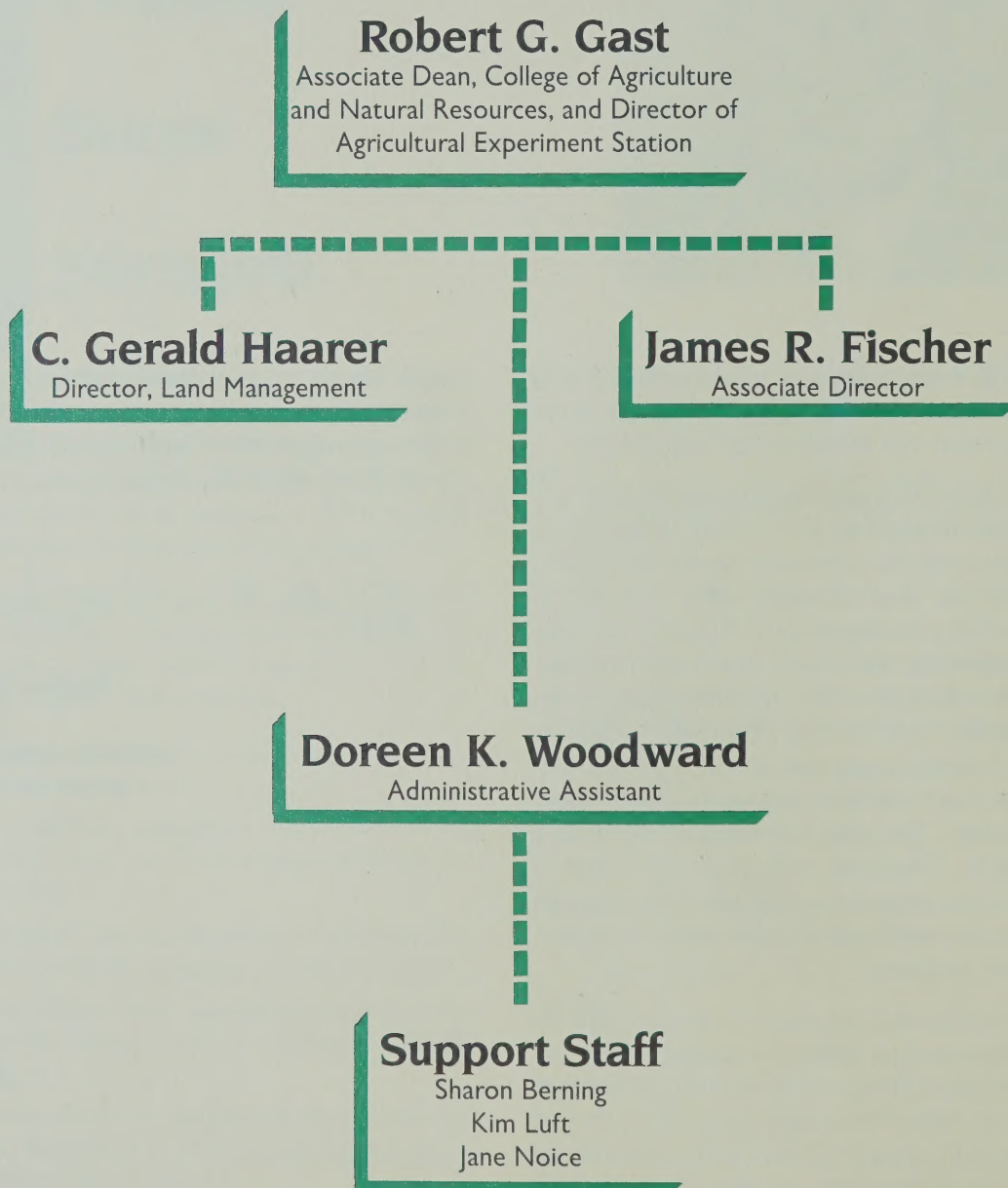
As emphasized last year, the annual reports are intended to serve as a record of how we have used our resources in the past so that we can more effectively judge how to use them in the future. Overall, 1985 has been an exciting and productive year for the MAES

and, based on the developments reported here, we should be in a position to serve Michigan agriculture and natural resources even more effectively in the future.



**Robert G. Gast**  
 Director  
 Michigan Agricultural  
 Experiment Station

# Agricultural Experiment Station Organizational Flow Chart







# College of Agriculture and Natural Resources Dean's Office

As of 10-1-85

## James H. Anderson

Vice Provost and Dean,  
College of Agriculture  
and Natural Resources

**ANR  
Development  
Office**

William Messina

**ANR  
Information  
Services**

Maxine Ferris

**Management  
Support  
Services**

Fred Whims

**Academic &  
Student  
Affairs**

Taylor J. Johnston

**Agricultural  
Experiment  
Station**

Robert G. Gast

**Cooperative  
Extension  
Service**

W. J. Moline

**Institute of  
International  
Agriculture**

Donald R. Isleib

# **AES Affiliated Deans, Directors, and Unit Administrators**

**As of 10-1-85**

## **Deans**

**James H. Anderson**

Vice Provost and Dean,  
College of Agriculture and Natural Resources  
(517) 355-0233

**Gwen Andrew**

Acting Dean,  
College of Human Ecology  
(517) 355-7714

**Richard Byerrum**

Dean,  
College of Natural Science  
(517) 355-4473

**Gwen Andrew**

Dean,  
College of Social Science  
(517) 355-6675

**John Tasker**

Dean,  
College of Veterinary Medicine  
(517) 355-6509

## **Directors**

**Robert G. Gast**

Associate Dean and Director,  
Agricultural Experiment Station  
(517) 355-0123

**W.J. Moline**

Associate Dean and Director,  
Cooperative Extension Service  
(517) 355-2308

**Donald R. Isleib**

Associate Dean and Director,  
Institute of International Agriculture  
Agriculture and Natural Resources  
(517) 355-0174

**Taylor J. Johnston**

Associate Dean and Director  
Academic Programs  
(517) 355-0234



## Unit Administrators

**Carroll Wamhoff**

Chairperson,  
Agricultural and Extension Education  
(517) 355-6580

**Larry Connor**

Chairperson,  
Agricultural Economics  
(517) 355-4567

**Donald Edwards**

Chairperson,  
Agricultural Engineering  
(517) 353-7268

**Maynard Hogberg**

Chairperson,  
Animal Science  
(517) 355-8384

**Maxine S. Ferris**

Manager,  
ANR Information Services  
(517) 355-1758

**Jack Preiss**

Chairperson,  
Biochemistry  
(517) 353-3257

**Edward Klos**

Chairperson,  
Botany & Plant Pathology  
(517) 355-4680

**Eldor Paul**

Chairperson,  
Crop & Soil Sciences  
(517) 355-0262

**James Bath**

Chairperson,  
Entomology  
(517) 355-4665

**Lawrence J. Fischer**

Director,  
Center of Environmental Toxicology  
(517) 353-6469

**Robert Griffore**

Chairperson,  
Family & Child Ecology  
(517) 355-7680

**Niles Kevern**

Chairperson,  
Fisheries & Wildlife  
(517) 353-0647

**Thayne Dutson**

Chairperson,  
Food Science & Human Nutrition  
(517) 355-8475

**Larry Tombaugh**

Chairperson,  
Forestry  
(517) 355-0093

**John Kelly**

Chairperson,  
Horticulture  
(517) 355-5191

**Jane Stolper**

Chairperson,  
Human Environment & Design  
(517) 355-7712

**Bernard Knezek**

Director of  
Agricultural and Natural Resources Programs  
for Kellogg Biological Station  
(517) 353-4569

**Edward Mather**

Chairperson,  
Large Animal Clinical Sciences  
(517) 353-9710

**C. Gerald Haarer**

Director,  
Land Management  
(517) 355-3272

**Paul Magee**

Chairperson,  
Microbiology & Public Health  
(517) 355-6465

**Chester Mackson**

Director,  
School of Packaging  
(517) 353-6462

**Lewis Moncrief**

Chairperson,  
Park and Recreation Resources  
(517) 353-0822

**Adalbert Koestner**

Chairperson,  
Pathology  
(517) 353-9160

**Fumio Matsumura**

Director,  
Pesticide Research Center  
(517) 353-9430

**Harvey Sparks**

Chairperson,  
Physiology  
(517) 355-4488

**Hans Kende**

Director,  
MSU-DOE Plant Research Lab  
(517) 355-2270

**Jon Bartholic**

Chairperson,  
Resource Development;  
Coordinator,  
Center for Remote Sensing;  
Director,  
Institute for Water Research  
(517) 355-3421

**Marvin Olsen**

Chairperson,  
Sociology  
(517) 355-6632



## Agricultural Experiment Station

# Outlying Stations

10-1-85

### 1. East Lansing Field Research Facilities

109 Agriculture Hall  
East Lansing, MI 48824-1039  
Phone: (517) 355-3272

C. Gerald Haarer  
Director, Land Management

### 2. Upper Peninsula Experiment Station

Chatham, MI 49816  
Phone: (906) 439-5114

Paul Naasz  
Farm Manager

### 3. Graham Horticultural Experiment Station

2989 Lake Michigan N.W.  
Grand Rapids, MI 49504  
Phone: (616) 453-1708

John Gilmore  
Research Manager

### 4. Dunbar Forest Experiment Station

Rt. 1  
Box 179  
Sault Ste. Marie, MI 49783  
Phone: (906) 632-3932

John Bright  
Resident Forester

### 5. Lake City Experiment Station

Lake City, MI 49651  
Phone: (616) 839-4608

Doug Nielsen  
Farm Manager

### 6. W.K. Kellogg Biological Station and W.K. Kellogg Forest

3700 E. Gull Lake Drive  
Hickory Corners, MI 49060  
Phone: (616) 671-5117

Bernie Knezek (616) 671-2324  
Director, Agricultural Programs

George Lauff (616) 671-2323  
Director, Programs and Development

Tom Stadt (616) 731-4597  
Senior Resident Forester

### 7. Muck Soils Research Farm

Rt. 3  
9422 E. Herbison Road  
Laingsburg, MI 48848  
Phone: (517) 641-4062

Ronald Gnagey  
Field Research Technician

### 8. Fred Russ Forest Experiment Station

Decatur, MI 49046  
Phone: (616) 782-5652

Greg Kowalewski  
Resident Forester

**9. Sodus Horticultural Experiment Station**

4440 River Road  
P.O. Box 145  
Sodus, MI 49126  
Phone: (616) 925-3030  
Jerry Grajauskis  
Operations Supervisor

**10. Montcalm Experimental Farm**

Rt. 1  
Lakeview, MI 48850  
Phone: (517) 365-3473  
Richard Kitchen  
Technician

**11. Trevor Nichols Research Complex**

Rt. 4, 6227 M-89  
Fennville, MI 49408  
Phone: (517) 355-9615 or (616) 561-5040  
Matthew Daly  
Farm Manager

**12. Saginaw Valley Beet and Bean Research Farm**

3066 S. Thomas Road  
Saginaw, MI 48603  
Phone: (517) 781-1160  
Paul Horny  
Farm Manager

**13. Clarksville Horticultural Experiment Station**

Box 77A  
9302 Portland Road  
Clarksville, MI 48815  
Phone: (517) 355-0239  
or (616) 693-2193  
Gerald Skeltis  
Farm Manager

**14. Northwest Michigan Horticultural Experiment Station**

6686 Center Highway  
Traverse City, MI 49684  
Phone: (616) 946-1510  
Charles Kesner  
Supervisor  
Bill Klein  
Farm Manager





# List of AES Scientists by Department

As of 10-1-85

The names listed here represent the faculty members who have an AES appointment and are in the tenure stream as of 10-1-85. The numbers shown under the category of "Other Faculty" indicate the number of other tenure stream faculty who are in that department but do not have an AES appointment.

## KEY:

T = Teaching R = Research E = Extension G = Grant O = Other  
12 = Professor 13 = Associate Professor 14 = Assistant Professor

## Agricultural Economics

Ph: (517) 355-4563

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Allen, John W.	12	0.10	0.15	0.00	0.00	0.75	Marketing
Black, J. Roy	12	0.30	0.50	0.20	0.00	0.00	Farm Management
Bonnen, James T.	12	0.15	0.85	0.00	0.00	0.00	Public Policy
Ferris, John N.	12	0.15	0.20	0.65	0.00	0.00	Outlook & Prices
Hamm, Larry G.	14	0.10	0.25	0.65	0.00	0.00	Dairy Mktg. & Policy
Hardesty, Sermin	14	0.20	0.80	0.00	0.00	0.00	Ag. Finance
Harsh, Stephen B.	12	0.15	0.25	0.60	0.00	0.00	Farm Management
Hepp, Ralph E.	12	0.05	0.10	0.85	0.00	0.00	Farm Management
Johnson, Glenn L.	12	0.35	0.65	0.00	0.00	0.00	Prod. Econ./Farm Mgt.
Libby, Lawrence W.	12	0.20	0.20	0.60	0.00	0.00	Res. Econ./Policy
Manderscheid, Lester	12	0.80	0.10	0.00	0.00	0.10	Price Analysis
Nott, Sherrill B.	12	0.15	0.20	0.65	0.00	0.00	Farm Mgmt. (Dairy)
Oehmke, James	14	0.25	0.75	0.00	0.00	0.00	Price Analysis
Pierson, Thomas R.	12	0.30	0.20	0.50	0.00	0.00	Marketing
Ricks, Donald J.	12	0.10	0.15	0.75	0.00	0.00	Marketing
Riley, Harold M.	12	0.30	0.15	0.00	0.00	0.55	Mktg./Econ. Dvlpt.
Robison, Lindon J.	13	0.10	0.90	0.00	0.00	0.00	Production Econ.
Schmid, A. Allan	12	0.40	0.60	0.00	0.00	0.00	Land Economics/ Public Policy
Schwab, Gerald D.	12	0.30	0.20	0.50	0.00	0.00	Farm Management
Shaffer, James D.	12	0.30	0.20	0.50	0.00	0.00	Mktg./Ag. Policy





## Agricultural Economics (Continued)

Sorenson, Vernon L.	12	0.15	0.30	0.55	0.00	0.00	Ag. Policy Trade
Stevens, Robert D.	12	0.15	0.40	0.00	0.00	0.45	Ag. Dev./Hlth. Econ.
Thompson, Stanley	13	0.10	0.90	0.00	0.00	0.00	Marketing
van Ravenswaay, Eileen	13	0.30	0.70	0.00	0.00	0.00	Pub. Pol./Food Safety
<b>SUBTOTALS:</b>		<b>5.45</b>	<b>9.70</b>	<b>7.00</b>	<b>0.00</b>	<b>1.85</b>	
<b>Other Faculty:</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
<b>TOTALS:</b>		<b>5.45</b>	<b>9.70</b>	<b>7.00</b>	<b>0.00</b>	<b>1.85</b>	

## Agricultural Engineering

Ph: (517) 355-4720

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Bakker-Arkema, Fred	12	0.30	0.70	0.00	0.00	0.00	Grain Dry/Storage
Bickert, William G.	12	0.00	0.20	0.80	0.00	0.00	Livestock Fac./Env.
Bralts, Vincent F.	14	0.10	0.20	0.00	0.50	0.20	Soil & Wtr./Intl. Pgm.
Brook, Roger C.	13	0.00	0.25	0.75	0.00	0.00	Post-Harv. Handling
Burkhardt, Thomas H.	12	0.60	0.25	0.00	0.00	0.15	Hydr. Cmpt. Aid Dsgn.
Cargill, Burton F. J.	12	0.00	0.25	0.75	0.00	0.00	Harv. and Mech.
Esmay, Merle L.	12	0.40	0.50	0.00	0.00	0.10	Structure/Environ.; Int'l. Programs
Gerrish, John B.	13	0.40	0.50	0.00	0.00	0.10	Elec. Robotics
Loudon, Theodore L.	13	0.00	0.45	0.55	0.00	0.00	Pollut. Mgmt./Irr.
Merva, George E.	12	0.40	0.60	0.00	0.00	0.00	Irrigation/Dmng.
Mrozowski, Timothy	14	0.80	0.20	0.00	0.00	0.00	Bldg. Construction
Person, Howard L.	13	0.00	0.30	0.70	0.00	0.00	Ag. Structure
Seegerlind, Larry L.	12	0.50	0.50	0.00	0.00	0.00	Finite Elem. Analy.
Srivastava, Ajit K.	13	0.30	0.60	0.00	0.00	0.10	Tillage/Modeling
Steffe, James F.	13	0.40	0.35	0.00	0.00	0.25	Food Engineering
Surbrook, Truman C.	13	0.15	0.25	0.00	0.00	0.60	Elec. Tech. in Agr.
Van Ee, Gary R.	13	0.25	0.65	0.00	0.00	0.10	Fruit/Veg. Mech.
Wilkinson, Robert H.	13	0.15	0.15	0.60	0.00	0.10	Human Factors Eng.
<b>SUBTOTALS:</b>		<b>4.75</b>	<b>6.90</b>	<b>4.15</b>	<b>0.50</b>	<b>1.70</b>	
<b>Other Faculty:</b>		<b>3.90</b>	<b>1.50</b>	<b>2.35</b>	<b>3.40</b>	<b>11.70</b>	
<b>TOTALS:</b>		<b>8.65</b>	<b>8.40</b>	<b>6.50</b>	<b>3.90</b>	<b>13.40</b>	

# Animal Science

Ph: (517) 355-8383

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Aulerich, Richard J.	12	0.00	0.75	0.25	0.00	0.00	Fur-bearing Animals
Balander, Richard J.	14	0.60	0.40	0.00	0.00	0.00	Avian Phys./Repro.
Bergen, Werner G.	12	0.20	0.80	0.00	0.00	0.00	Rum. Nutr./Grth. Biol.
Bucholtz, Herbert F.	13	0.00	0.20	0.80	0.00	0.00	Dairy Nutr./Mgmt.
Bursian, Steven	13	0.15	0.85	0.00	0.00	0.00	Avian Phys./Toxic.
Chang, Timothy S.	12	0.15	0.85	0.00	0.00	0.00	M&PH/Poultry Path.
Coe, Paul H.	14	0.00	0.20	0.00	0.00	0.80	Animal Health
Coleman, Theo H.	12	0.25	0.75	0.00	0.00	0.00	Avian Genet./Mgmt.
Cook, Robert M.	12	0.20	0.80	0.00	0.00	0.00	Rum. Nutrition
Dukelow, W. Richard	12	0.00	0.48	0.00	0.00	0.52	Physiology
Emery, Roy S.	12	0.20	0.60	0.00	0.00	0.20	Rum. Nutrition
Ferris, Theodore A.	14	0.00	0.20	0.80	0.00	0.00	Breeding
Flegal, Cal J.	12	0.00	0.35	0.65	0.00	0.00	Avian Nutr./Mgmt.
Fogwell, Ralph L.	13	0.40	0.60	0.00	0.00	0.00	Physiology
Gill, John L.	12	0.50	0.50	0.00	0.00	0.00	Statistics Genet.
Hawkins, David R.	12	0.60	0.20	0.00	0.00	0.20	Beef Cattle Nutr.
Ireland, James J.	13	0.20	0.80	0.00	0.00	0.00	Physiology
Magee, William T.	12	0.30	0.50	0.00	0.00	0.20	Animal Breeding
Mao, Ivan Ling	12	0.30	0.70	0.00	0.00	0.00	Breeding
McGilliard, Lon D.	12	0.50	0.50	0.00	0.00	0.00	Breeding
Merkel, Robert A.	12	0.50	0.25	0.00	0.00	0.25	Growth Biology
Miller, Elwyn R.	12	0.05	0.80	0.00	0.00	0.15	Swine Nutrition
Polin, Donald	12	0.25	0.75	0.00	0.00	0.00	Avian Nutrition
Rahn, Allan P.	12	0.00	0.20	0.65	0.00	0.15	Mgmt. Agr. Econ.
Ringer, Robert K.	12	0.15	0.25	0.00	0.00	0.60	Avian Phys./Toxic.
Ritchie, Harlan D.	12	0.00	0.10	0.90	0.00	0.00	Beef Ctl. Nutr. Mgmt.
Speicher, John A.	12	0.00	0.20	0.80	0.00	0.00	Dry. Farm Mgmt. Spec.
Stowe, Howard D.	13	0.00	0.45	0.00	0.00	0.55	Animal Nutrition
Thomas, J. William	12	0.00	0.50	0.50	0.00	0.00	Rum. Nutrition
Tucker, H. Allen	12	0.20	0.60	0.00	0.20	0.00	Phys./Lactation





## Animal Science (Continued)

Ullrey, Duane E.	12	0.40	0.60	0.00	0.00	0.00	Animal Nutrition
Yokoyama, Melvin T.	13	0.15	0.85	0.00	0.00	0.00	Animal Nutr./Micro.
<b>SUBTOTALS</b>		<b>6.40</b>	<b>17.23</b>	<b>6.55</b>	<b>0.20</b>	<b>4.42</b>	
<b>Other Faculty:</b>		<b>3.40</b>	<b>0.15</b>	<b>3.72</b>	<b>0.00</b>	<b>3.03</b>	
<b>TOTALS:</b>		<b>9.80</b>	<b>17.38</b>	<b>10.27</b>	<b>0.20</b>	<b>7.45</b>	

## Biochemistry

Ph: (517) 355-1600

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Anderson, Richard L.	12	0.20	0.50	0.00	0.00	0.30	Carbohy. Metab.
Aust, Steven D.	12	0.00	0.80	0.00	0.00	0.20	Toxicology
Davis, Ronald L.	14	0.20	0.60	0.00	0.00	0.20	Molec. Biology
Deal, William C., Jr.	12	0.00	0.40	0.00	0.00	0.60	Phys. Biochem.
Fraker, Pamela J.	12	0.00	0.44	0.00	0.00	0.56	Immunology
Holland, John F.	12	0.00	0.80	0.00	0.00	0.20	Analytical Biochem.
Kaguni, Jon M.	14	0.00	0.80	0.00	0.00	0.20	Molec. Biology
Kindel, Paul K.	12	0.20	0.60	0.00	0.00	0.20	Plant Biochem.
Luecke, Richard W.	12	0.00	0.60	0.00	0.00	0.40	Trace Elem. Bio.
Suelter, Clarence H.	12	0.00	0.50	0.00	0.00	0.50	Enzymology
Sweeley, Charles	12	0.18	0.07	0.00	0.00	0.75	Metabolic Biochem.
Tolbert, N. Edward	12	0.16	0.80	0.00	0.00	0.04	Plant Biochemistry
Watson, J. Throck	12	0.10	0.30	0.00	0.00	0.60	Analytical Biochem.
<b>SUBTOTALS:</b>		<b>1.04</b>	<b>7.21</b>	<b>0.00</b>	<b>0.00</b>	<b>4.75</b>	
<b>Other Faculty:</b>		<b>2.15</b>	<b>0.30</b>	<b>0.00</b>	<b>0.00</b>	<b>14.55</b>	
<b>TOTALS:</b>		<b>3.19</b>	<b>7.51</b>	<b>0.00</b>	<b>0.00</b>	<b>19.30</b>	

## Botany and Plant Pathology

Ph: (517) 353-4683

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Adams, Gerard C.	14	0.00	0.40	0.60	0.00	0.00	Plant Pathology
Fulbright, Dennis W.	13	0.00	1.00	0.00	0.00	0.00	Wheat Pathology
Hammerschmidt, Raymond	13	0.00	0.90	0.00	0.00	0.10	Plant Pathology
Hart, John H.	12	0.00	0.60	0.00	0.00	0.40	Plant Pathology
Hart, L. Patrick	13	0.00	0.50	0.50	0.00	0.00	Plant Pathology
Jones, Alan L.	12	0.00	0.50	0.50	0.00	0.00	Plant Pathology
Lacy, Melvyn L.	12	0.00	0.40	0.50	0.00	0.10	Plant Pathology
Lockwood, John L.	12	0.00	0.90	0.00	0.00	0.10	Plant Pathology
Murakishi, Harry H.	12	0.00	0.90	0.00	0.00	0.10	Plant Virol. Path.
Ramsdell, Donald C.	12	0.00	0.50	0.50	0.00	0.00	Plant Pathology
Safir, Gene R.	12	0.00	0.90	0.00	0.00	0.10	Plant Pathology
Scheffer, Robert P.	12	0.00	0.80	0.00	0.00	0.20	Plant Pathology
Sears, Barbara	14	0.00	0.25	0.00	0.00	0.75	Molecular Gen.
Stephens, Christine	13	0.00	0.39	0.61	0.00	0.00	Plant Pathology
Vargas, Joseph M., Jr.	12	0.00	0.50	0.15	0.00	0.35	Plant Pathology
<b>SUBTOTALS:</b>		<b>0.00</b>	<b>9.44</b>	<b>3.36</b>	<b>0.00</b>	<b>2.20</b>	
<b>Other Faculty:</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.50</b>	<b>10.50</b>	
<b>TOTALS:</b>		<b>0.00</b>	<b>9.44</b>	<b>3.36</b>	<b>0.50</b>	<b>12.70</b>	

## Crop and Soil Sciences

Ph: (517) 355-0262

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Adams, Wayne M.	12	0.25	0.75	0.00	0.00	0.00	Plant Breeding
Boyd, Stephen A.	13	0.25	0.75	0.00	0.00	0.00	Soil Chemistry
Branham, Bruce E.	14	0.25	0.75	0.00	0.00	0.00	Turfgrass Phys.
Chase, Richard W.	12	0.00	0.25	0.75	0.00	0.00	Plant Physiology
Christenson, Donald R.	12	0.00	0.50	0.50	0.00	0.00	Soil Fert. Mgmt.
Cress, Charles E.	12	0.90	0.10	0.00	0.00	0.00	Plant Science
Crum, James L.	14	0.60	0.25	0.00	0.00	0.15	Soil Class./Genesis
Ellis, Boyd G.	12	0.50	0.50	0.00	0.00	0.00	Soil Fert. Mgmt.



## Crop and Soil Sciences (Continued)

Erickson, A. Earl	12	0.25	0.75	0.00	0.00	0.00	Soil Chem. Phys.
Everson, Everett H.	12	0.25	0.75	0.00	0.00	0.00	Plant Breeding
Foster, Eunice S.	14	0.85	0.15	0.00	0.00	0.00	Plant Physiology
Freed, Russell D.	13	0.25	0.50	0.00	0.00	0.25	Int. Agron./Plnt. Brdg.
Hesterman, Oran B.	14	0.00	0.25	0.75	0.00	0.00	Corn/Soybean Prod.
Isleib, Thomas G.	14	0.25	0.75	0.00	0.00	0.00	Plant Breeding
Jacobs, Lee W.	12	0.00	0.50	0.50	0.00	0.00	Ext. Environ. Spc.
Kells, James F., Jr.	14	0.00	0.40	0.60	0.00	0.00	Weed Science
Knezek, B.D.	12	0.50	0.50	0.00	0.00	0.00	Micronutrient Wst. Util.
Kunze, Raymond J.	12	0.50	0.50	0.00	0.00	0.00	Soil Physiology
Leep, Richard H.	13	0.00	0.50	0.50	0.00	0.00	Soil Fert. Prod.
Mokma, Delbert L.	13	0.50	0.50	0.00	0.00	0.00	Genesis Classif.
Mortland, Max M.	12	0.50	0.50	0.00	0.00	0.00	Soil Chem. Phys.
Payne, Kenyon T.	12	0.25	0.25	0.00	0.00	0.50	Plant Breeding
Penner, Donald	12	0.20	0.80	0.00	0.00	0.00	Weed Physiology
Pierce, J. Francis	14	0.00	0.50	0.50	0.00	0.00	Soil Mgmt. Systems
Reicosky, David A.	14	0.25	0.75	0.00	0.00	0.00	Phys. Genetics
Rieke, Paul E.	12	0.00	0.35	0.50	0.00	0.15	Soil Fert. Mgmt.
Ritchie, Joe. T.*	12	0.00	0.00	0.50	0.00	0.50	Soil Phys./Plt. Stress
Rossman, Elmer C.	12	0.25	0.75	0.00	0.00	0.00	Plant Brdg./Genet.
Smucker, A.J.	12	0.25	0.75	0.00	0.00	0.00	Soil Biophysics
Tesar, Milo B.	12	0.20	0.75	0.00	0.00	0.05	Past./Forage Crops
Tiedje, James M.	12	0.25	0.60	0.00	0.00	0.15	Soil Microbiology
Vitosh, Maurice L.	12	0.00	0.30	0.70	0.00	0.00	Soil Fert. Mgmt.
Warncke, Darryl D.	13	0.00	0.50	0.50	0.00	0.00	Grnhs./Veg. Soil Fert.
<b>SUBTOTALS:</b>		<b>8.25</b>	<b>16.70</b>	<b>6.30</b>	<b>0.00</b>	<b>1.75</b>	
<b>Other Faculty:</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
<b>TOTALS:</b>		<b>8.25</b>	<b>16.70</b>	<b>6.30</b>	<b>0.00</b>	<b>1.75</b>	

\*Nowlin Professor for Water Research



# Entomology

Ph: (517) 355-4662

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Ayers, George S.	13	0.25	0.10	0.00	0.00	0.65	Pestic. Appl. Sci./Apic.
Bird, George W.	12	0.00	0.40	0.50	0.00	0.10	Agr. Nematology
Carlson, John D.	14	0.00	0.20	0.00	0.35	0.45	Agr. Meteorology
Edens, Thomas C.	13	0.00	0.20	0.00	0.00	0.80	Resc. Econ./Sust. Agr.
Gage, Stuart H.	13	0.00	0.75	0.00	0.00	0.25	Env. Sys./Ent. Sur.
Grafius, Edward	13	0.00	0.50	0.50	0.00	0.00	Veg. Ins. Eco. Mgt.
Haynes, Dean L.	12	0.00	0.75	0.00	0.00	0.25	Insect Pop. Ecol.
Hoopingarner, Roger A.	12	0.00	0.10	0.70	0.00	0.20	Apic./Pollin
Howitt, Angus J.	12	0.00	0.25	0.75	0.00	0.00	Fruit Ins. Mgmt.
Merritt, Richard W.	12	0.00	0.50	0.00	0.00	0.50	Aquatic Entomology
Miller, James	13	0.00	0.50	0.00	0.00	0.50	Ins. Phys./Ecol. Attr.
Newson, Harold D.	12	0.00	0.25	0.30	0.00	0.45	Med. Entomology
Ruppel, Robert F.	12	0.00	0.25	0.75	0.00	0.00	Field Crop Insects
Simmons, Gary A.	12	0.00	0.30	0.50	0.00	0.20	Forest Ins. Ecology
Smitley, David R.	14	0.00	0.50	0.50	0.00	0.00	Landscape Entomology
Stehr, Frederick W.	12	0.00	0.50	0.00	0.00	0.50	Ins. Ecol./Syst.
Whalon, Mark E.	13	0.00	0.75	0.00	0.00	0.25	Fruit Ins./Vectors
<b>SUBTOTALS:</b>		<b>0.25</b>	<b>6.80</b>	<b>4.50</b>	<b>0.35</b>	<b>5.10</b>	
<b>Other Faculty:</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>8.00</b>	
<b>TOTALS:</b>		<b>0.25</b>	<b>6.80</b>	<b>4.50</b>	<b>0.35</b>	<b>13.10</b>	



## Family and Child Ecology

Ph: (517) 355-7680

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Boger, Robert	12	0.00	0.05	0.00	0.00	0.95	Child Development
Borland, Dolores C.	13	0.00	0.25	0.00	0.00	0.75	Human Dev. & Family
Bubolz, Margaret M.	12	0.00	0.30	0.00	0.00	0.70	Hum. Dev. & Family
Gladhart, Peter M.	13	0.00	0.25	0.00	0.00	0.75	Ext. Fam. Res. Mgmt.
Keefe, Dennis R.	14	0.00	0.25	0.00	0.00	0.75	Family Econ.
Keith, Joanne E.	13	0.00	0.10	0.55	0.00	0.35	Family Life
Phenice, Lillian	13	0.00	0.25	0.00	0.00	0.75	Human Dev. & Family
Schiamberg, Lawrence	12	0.00	0.25	0.00	0.00	0.75	Child Development
SUBTOTALS:		0.00	1.70	0.55	0.00	5.75	
Other Faculty:		0.00	0.00	3.35	0.00	11.65	
TOTALS:		0.00	1.70	3.90	0.00	17.40	

## Fisheries & Wildlife

Ph: (517) 355-4477

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Garling, Donald L.	14	0.20	0.30	0.50	0.00	0.00	Aquaculture
Giesy, John P.	13	0.35	0.65	0.00	0.00	0.00	Toxicology
Haufler, Jonathon B.	13	0.50	0.50	0.00	0.00	0.00	Wildlf. Ecol. Forest
King, Darrell L.	12	0.55	0.45	0.00	0.00	0.00	Limnology
Liston, Charles R.	13	0.50	0.50	0.00	0.00	0.00	Ichtyol. Ecol.
McNabb, Clarence D.	12	0.50	0.50	0.00	0.00	0.00	Limnol. Ecol.
Peyton, R. Benny	13	0.70	0.30	0.00	0.00	0.00	Environ. Education
Prince, Harold H.	12	0.55	0.45	0.00	0.00	0.00	Water Fowl
Taylor, Mitchell K.	14	0.50	0.50	0.00	0.00	0.00	Wildlife Biometry
Taylor, William W.	13	0.50	0.50	0.00	0.00	0.00	Fisheries
SUBTOTALS:		4.85	4.65	0.50	0.00	0.00	
Other Faculty:		1.55	0.00	0.80	0.00	0.00	
TOTALS:		6.40	4.65	1.30	0.00	0.00	

# Food Science

Ph: (517) 355-8474

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Booren, Alden M.	13	0.10	0.15	0.75	0.00	0.00	Meat/Poultry/Fish
Brunner, J. Robert	12	0.20	0.80	0.00	0.00	0.00	Dairy Prod./Fd. Chem.
Cash, Jerry N.	13	0.00	0.25	0.75	0.00	0.00	Fruit/Veg. Products
Filadelfi, Mary Ann	14	0.80	0.20	0.00	0.00	0.00	Sens. Eval./Flvr. Chem.
Gray, J. Ian	12	0.40	0.35	0.00	0.00	0.25	Food Chemistry
Gulke, Eric A.	13	0.00	0.25	0.00	0.00	0.75	Food Engineering
Harte, Bruce R.	13	0.00	0.25	0.00	0.00	0.75	Food Packaging
Mannheim, Chaim H.	12	0.00	0.50	0.00	0.00	0.50	Food Packaging
Marakis, Pericles	12	0.25	0.75	0.00	0.00	0.00	Food/Veg. Chemistry
Merkel, Robert A.	12	0.00	0.25	0.00	0.00	0.75	Meats
Morgan, Ronnie G.	13	0.10	0.65	0.00	0.00	0.25	Food Proc. Engr.
Partridge, John A.	14	0.75	0.25	0.00	0.00	0.00	Dairy Technology
Pearson, Albert M.	12	0.20	0.80	0.00	0.00	0.00	Meat Chemistry
Pestka, James J.	14	0.50	0.50	0.00	0.00	0.00	Food Microbiology
Price, James F.	12	0.50	0.50	0.00	0.00	0.00	Meat/Poultry Prod.
Smith, Denise M.	14	0.40	0.60	0.00	0.00	0.00	Poultry/Egg Prod.
Steffe, James F.	13	0.00	0.25	0.00	0.00	0.75	Food Engineering
Stine, Charles M.	12	0.80	0.20	0.00	0.00	0.00	Dairy Chemistry
Uebersax, Mark A.	13	0.40	0.60	0.00	0.00	0.00	Fruit/Veg. Products
Wishnetsky, Theodore	13	0.25	0.25	0.50	0.00	0.00	Fruit/Veg. Products
<b>SUBTOTALS:</b>		<b>5.65</b>	<b>8.35</b>	<b>2.00</b>	<b>0.00</b>	<b>4.00</b>	
<b>Other Faculty:</b>		<b>0.00</b>	<b>0.00</b>	<b>0.60</b>	<b>0.00</b>	<b>0.40</b>	
<b>TOTALS:</b>		<b>5.65</b>	<b>8.35</b>	<b>2.60</b>	<b>0.00</b>	<b>4.40</b>	





## Forestry

Ph: (517) 355-0090

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Chappelle, Daniel E.	12	0.33	0.00	0.00	0.00	0.67	Forest Economics
Dickmann, Donald I.	12	0.40	0.60	0.00	0.00	0.00	Tree Physiology
Hanover, James W.	12	0.30	0.70	0.00	0.00	0.00	Forest Genetics
Hart, James B., Jr.	13	0.50	0.50	0.00	0.00	0.00	Forest Soils
Huber, Henry A.	12	0.00	0.10	0.90	0.00	0.00	Forest Products
James, Lee M.	12	0.60	0.40	0.00	0.00	0.00	Forest Economics
Keathley, Daniel	14	0.25	0.75	0.00	0.00	0.00	Forest Genetics
Kielbaso, Julian J.	12	0.60	0.40	0.00	0.00	0.00	Urban Forestry
Lantagne, Douglas O.	14	0.00	0.20	0.80	0.00	0.00	Silviculture
Leefers, Larry	14	0.50	0.50	0.00	0.00	0.00	Forest Economics
Manthy, Robert S.	12	0.50	0.50	0.00	0.00	0.00	Forest Economics
Marty, Robert J.	12	0.70	0.30	0.00	0.00	0.00	Forest Management
Olson, Karen	14	0.10	0.30	0.60	0.00	0.00	Forest Economics
Pregitzer, Kurt S.	14	0.40	0.60	0.00	0.00	0.00	Forest Ecology
Ramm, Carl W.	13	0.40	0.60	0.00	0.00	0.00	Forest Biometrics
Sliker, Alan W.	12	0.30	0.70	0.00	0.00	0.00	Wood Science
Suchsland, Otto	12	0.20	0.80	0.00	0.00	0.00	Wood Science
SUBTOTALS:		6.05	7.85	2.30	0.00	0.67	
Other Faculty:		0.00	0.00	0.00	0.00	0.00	
TOTALS:		6.05	7.85	2.30	0.00	0.67	

# Horticulture

Ph: (517) 355-5191

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Biernbaum, John	14	0.45	0.10	0.00	0.00	0.45	Floriculture
Bukovac, Martin J.	12	0.10	0.90	0.00	0.00	0.00	Plant Phys./Pomol.
Cameron, Arthur C.	14	0.30	0.70	0.00	0.00	0.00	Plnt. Phys./Lnds. Hort.
Carlson, William H.	12	0.15	0.35	0.50	0.00	0.00	Plant Phys./Flori.
Dennis, Frank G., Jr.	12	0.60	0.40	0.00	0.00	0.00	Plant Phys./Pomol.
Dilley, David R.	12	0.20	0.80	0.00	0.00	0.00	Posthar. Phys./Pomol.
Ewart, Lowell C.	12	0.10	0.60	0.00	0.00	0.30	Floral/Onion Brdg.
Flore, James A.	12	0.35	0.65	0.00	0.00	0.00	Plant Phys./Pomology
Hancock, James F.	13	0.10	0.90	0.00	0.00	0.00	Small Fruit Brdg.
Hanson, Eric J.	14	0.00	0.35	0.65	0.00	0.00	Pomol. Small Fruits
Heins, Royal D.	13	0.30	0.70	0.00	0.00	0.00	Plant Phys./Flor.
Herner, Robert C.	12	0.35	0.65	0.00	0.00	0.00	Psthar. Phys./Veg. Crop
Honma, Shigemi	12	0.10	0.90	0.00	0.00	0.00	Vegetable Breeding
Howell, Gordon S.	12	0.15	0.80	0.00	0.00	0.05	Pl. Phys./Vitic./Enology
Hull, Jerome, Jr.	12	0.00	0.30	0.70	0.00	0.00	Pomology
Iezonni, Amy F.	14	0.20	0.80	0.00	0.00	0.00	Fruit Breed./Genet.
Perry, Ronald L.	14	0.00	0.50	0.50	0.00	0.00	Pomol./Rootstocks
Price, Hugh C.	12	0.00	0.50	0.50	0.00	0.00	Vegetable Crops
Putnam, Alan R.	12	0.35	0.65	0.00	0.00	0.00	Plt. Phys./Weed Sci.
Ries, Stanley K.	12	0.20	0.80	0.00	0.00	0.00	Plant Physiology
Sink, Kenneth C.	12	0.25	0.69	0.00	0.00	0.06	Genet./Plant Brdg.
Widders, Irvin E.	14	0.25	0.75	0.00	0.00	0.00	Veg. Physiology
Zandstra, Bernard H.	13	0.00	0.30	0.70	0.00	0.00	Vegetable Crops
<b>SUBTOTALS:</b>		<b>4.50</b>	<b>14.09</b>	<b>3.55</b>	<b>0.00</b>	<b>0.86</b>	
<b>Other Faculty:</b>		<b>1.20</b>	<b>0.00</b>	<b>1.30</b>	<b>0.15</b>	<b>1.35</b>	
<b>TOTALS:</b>		<b>5.70</b>	<b>14.09</b>	<b>4.85</b>	<b>0.15</b>	<b>2.21</b>	



## Human Environment & Design

Ph: (517) 355-7712

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Slocum, Ann C.	13	0.75	0.25	0.00	0.00	0.00	Clothing & Textiles
Sontag, M. Suzanne	13	0.75	0.25	0.00	0.00	0.00	Clothing & Textiles
Sternquist (Witter), Brenda S.	13	0.75	0.25	0.00	0.00	0.00	Tourism/Merc. Mgmt.
SUBTOTALS:		2.25	0.75	0.00	0.00	0.00	
Other Faculty:		9.00	0.00	1.00	0.00	0.00	
TOTALS:		11.25	0.75	1.00	0.00	0.00	

## Human Nutrition

Ph: (517) 355-8474

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Bennink, Maurice R.	12	0.50	0.50	0.00	0.00	0.00	Nutrition
Bond, Jenny T.	12	0.60	0.40	0.00	0.00	0.00	Nutrition
Chenoweth, Wanda L.	12	0.50	0.25	0.00	0.00	0.25	Nutrition
Hoerr, Sharon M.	14	0.75	0.25	0.00	0.00	0.00	Community Nutrition
Ott, Dana B.	14	0.50	0.50	0.00	0.00	0.00	Foods & Nutrition
Romsos, Dale R.	12	0.30	0.70	0.00	0.00	0.00	Lipid Metabolism
Sawyer, Carol A.	13	0.75	0.25	0.00	0.00	0.00	Food Service Mgmt.
Schemmel, Rachelle A.	12	0.45	0.30	0.00	0.00	0.25	Nutrition
Song, Won	14	0.75	0.25	0.00	0.00	0.00	Nutrition
Zabik, Mary E.	12	0.50	0.50	0.00	0.00	0.00	Foods
Zile, Maija H.	13	0.50	0.50	0.00	0.00	0.00	Nutrition
SUBTOTALS:		6.10	4.40	0.00	0.00	0.50	
Other Faculty:		1.40	0.00	0.35	0.00	0.25	
TOTALS:		7.50	4.40	0.35	0.00	0.75	



## Kellogg Biological Station

Ph: (517) 353-9445

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Bush, Guy L.	12	0.00	0.10	0.00	0.00	0.90	Genetics
SUBTOTALS:		0.00	0.10	0.00	0.00	0.00	
Other Faculty:		0.00	0.00	0.00	0.00	0.00	
TOTALS:		0.00	0.10	0.00	0.00	0.90	

## Large Animal Clinical Sciences

Ph: (517) 355-9593

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Herd, Thomas H.	13	0.00	0.25	0.00	0.00	0.75	Food Animal Med.
Kaneene, John	13	0.00	0.15	0.00	0.00	0.85	Epidem./Dis. Impact
Nachreiner, Raymond F.	12	0.00	0.25	0.00	0.00	0.75	Clin. Endocrinology
Robinson, Norman E.	12	0.00	0.33	0.00	0.00	0.67	Respir. Physiology
Stowe, Howard D.	12	0.00	0.30	0.00	0.00	0.70	Clinical Nutrition
Thacker, Brad J.	14	0.00	0.58	0.00	0.00	0.42	Swine Medicine
SUBTOTALS:		0.00	1.86	0.00	0.00	4.14	
Other Faculty:		0.00	0.00	2.10	18.00	1.10	
TOTALS:		0.00	1.86	2.10	18.00	5.24	



## Microbiology & Public Health

Ph: (517) 355-6463

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Breznak, John A.	12	0.00	0.30	0.00	0.00	0.70	Microbial Ecology
Dazzo, Frank B.	13	0.00	0.60	0.00	0.00	0.40	Microbial Ecology
Dodgson, Jerry B.	13	0.00	0.14	0.00	0.00	0.86	Molecular Biology
Hausinger, Robert P.	14	0.00	0.40	0.00	0.00	0.60	Microbiology
Reddy, C. Adinarayana	13	0.00	0.50	0.00	0.00	0.50	Microbiology
Sadoff, Harold L.	12	0.00	0.40	0.00	0.00	0.60	Microbiology
Uffen, Robert L.	12	0.00	0.40	0.00	0.00	0.60	Microbial Physiology
Velicer, Leland F.	12	0.00	0.30	0.00	0.00	0.70	Virology
Williams, Jeffrey F.	12	0.00	0.40	0.00	0.00	0.60	Parasitology
SUBTOTALS:		0.00	3.44	0.00	0.00	5.56	
Other Faculty:		15.00	15.00	0.00	0.00	0.00	
TOTALS:		15.00	18.44	0.00	0.00	5.56	

## Packaging

Ph: (517) 355-9580

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Giacin, Jack R.	12	0.50	0.50	0.00	0.00	0.00	Packaging
Harte, Bruce	13	0.75	0.25	0.00	0.00	0.00	Packaging
Lee, Julian	14	0.80	0.20	0.00	0.00	0.00	Packaging
SUBTOTALS:		2.05	0.95	0.00	0.00	0.00	
Other Faculty:		4.05	0.95	0.00	0.00	0.00	
TOTALS:		6.10	1.90	0.00	0.00	0.00	

## Park & Recreation Resources

Ph: (517) 353-5190

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Fridgen, Joseph D.	13	0.40	0.60	0.00	0.00	0.00	Leisure/Env. Perc.
Holecek, Donald F.	12	0.50	0.50	0.00	0.00	0.00	Res. Econ./Tourism
McDonough, Maureen H.	14	0.35	0.15	0.50	0.00	0.00	Environmental Interp.
Stynes, Daniel J.	13	0.50	0.50	0.00	0.00	0.00	Sys. Analysis & Plan.
<b>SUBTOTALS:</b>		<b>1.75</b>	<b>1.75</b>	<b>0.50</b>	<b>0.00</b>	<b>0.00</b>	
<b>Other Faculty:</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
<b>TOTALS:</b>		<b>1.75</b>	<b>1.75</b>	<b>0.50</b>	<b>0.00</b>	<b>0.00</b>	

## Pathology

Ph: (517) 353-9160

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Padgett, George A.	12	0.00	0.25	0.00	0.00	0.75	Comp. Veterinary Path.
Sleight, Stuart D.	12	0.00	0.70	0.00	0.00	0.30	Veterinary Pathology
Slocombe, Ronald F.	13	0.00	0.50	0.00	0.00	0.50	Veterinary Pathology
Trapp, Allan L.	12	0.00	0.10	0.00	0.00	0.90	Diag. Veterinary Path.
Waxler, Glenn L.	12	0.00	0.25	0.00	0.00	0.75	Veterinary Pathology
Whitehair, Charles K.	12	0.00	0.80	0.00	0.00	0.20	Lab Animals
<b>SUBTOTALS:</b>		<b>0.00</b>	<b>2.60</b>	<b>0.00</b>	<b>0.00</b>	<b>3.40</b>	
<b>Other Faculty:</b>		<b>8.49</b>	<b>1.66</b>	<b>0.50</b>	<b>0.00</b>	<b>1.00</b>	
<b>TOTALS:</b>		<b>8.49</b>	<b>4.26</b>	<b>0.50</b>	<b>0.00</b>	<b>4.40</b>	

## Pesticide Research Center

Ph: (517) 353-9430

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Giesy, John P., Jr.	12	0.00	0.55	0.00	0.00	0.45	Aquat. Fates/Effects
Ringer, Robert K.	12	0.00	0.50	0.00	0.00	0.50	Physiology
Zabik, Matthew J.	12	0.00	0.70	0.00	0.00	0.30	Chem. Toxicology
<b>SUBTOTALS:</b>		<b>0.00</b>	<b>1.75</b>	<b>0.00</b>	<b>0.00</b>	<b>1.25</b>	
<b>Other Faculty:</b>		<b>0.65</b>	<b>1.15</b>	<b>0.00</b>	<b>0.00</b>	<b>0.20</b>	
<b>TOTALS:</b>		<b>0.65</b>	<b>2.90</b>	<b>0.00</b>	<b>0.00</b>	<b>1.45</b>	





## Physiology

Ph: (517) 355-6475

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Dukelow, W. Richard	12	0.00	0.40	0.00	0.00	0.60	Repro. Physiology
Fromm, Paul O.	12	0.00	0.50	0.00	0.00	0.50	Compar. Physiology
Riegle, Gail D.	12	0.00	0.25	0.00	0.00	0.75	Endocrinology
Ringer, Robert K.	12	0.00	0.10	0.00	0.00	0.90	Avian Physiology
<b>SUBTOTALS:</b>		<b>0.00</b>	<b>1.25</b>	<b>0.00</b>	<b>0.00</b>	<b>2.75</b>	
<b>Other Faculty:</b>		<b>0.00</b>	<b>18.30</b>	<b>0.00</b>	<b>0.00</b>	<b>1.15</b>	
<b>TOTALS:</b>		<b>0.00</b>	<b>19.55</b>	<b>0.00</b>	<b>0.00</b>	<b>3.90</b>	

## Resource Development

Ph: (517) 355-3421

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Bronstein, Daniel A.	12	0.92	0.08	0.00	0.00	0.00	Env. Policy & Law
Chappelle, Daniel E.	12	0.60	0.07	0.00	0.00	0.33	Res. Econ. & Pol.
Dersch, Eckhart	12	0.25	0.10	0.65	0.00	0.00	Nat. Res. Mgmt.
Edens, Thomas C.	14	0.00	0.80	0.00	0.00	0.20	Res. Econ. & Pol.
Fear, Frank A.	13	0.75	0.25	0.00	0.00	0.00	Comm. & Reg. Dev.
Humphrys, Clifford R.	12	0.70	0.30	0.00	0.00	0.00	Nat. Res. Mgmt.
Kakela, Peter J.	13	0.20	0.30	0.38	0.12	0.00	Nat. Res. Mgmt.
Kimball, William J.	12	0.20	0.10	0.70	0.00	0.00	Comm. & Reg. Dev.
Nickel, Paul E.	12	0.75	0.25	0.00	0.00	0.00	Res. Econ. & Pol.
Schultink, Gerhardus	14	0.13	0.13	0.00	0.74	0.00	Nat. Res. Mgmt.
Thullen, Manfred	12	0.00	0.19	0.00	0.00	0.81	Comm. & Reg. Dev.
<b>SUBTOTALS:</b>		<b>4.50</b>	<b>2.57</b>	<b>1.73</b>	<b>0.86</b>	<b>1.34</b>	
<b>Other Faculty:</b>		<b>2.27</b>	<b>0.83</b>	<b>0.90</b>	<b>0.00</b>	<b>0.00</b>	
<b>TOTALS:</b>		<b>6.77</b>	<b>3.40</b>	<b>2.63</b>	<b>0.86</b>	<b>1.34</b>	

# Sociology

Ph: (517) 355-6640

Name	Rank	Full Time Employee—Percent					Area of Interest
		T	R	E	G	O	
Beegle, J. Allan	12	0.00	0.50	0.00	0.00	0.50	Population Changes
Harris, Craig K.	13	0.00	0.50	0.00	0.00	0.50	Soc. of Agriculture
Johnson, Nan E.	13	0.00	0.50	0.00	0.00	0.50	Demography
Morrison, Denton	12	0.00	0.50	0.00	0.00	0.50	Environmental Soc.
Schwarzweiler, Harry K.	12	0.00	0.50	0.00	0.00	0.50	Soc. of Agriculture
SUBTOTALS:		0.00	2.50	0.00	0.00	2.50	
Other Faculty:		21.50	0.50	0.00	0.00	0.00	
TOTALS:		21.50	3.00	0.00	0.00	2.50	
GRAND SUBTOTALS:		63.19	135.34	44.19	1.91	53.37	
GRAND TOTALS:		129.65	175.68	60.26	23.96	118.25	



# List of Active AES Projects\*

## By Department

\*Signifies Regional Research Project

### Agricultural & Extension Education

Project 1400	<b>A Professional Development Program for Research Faculty in AES</b>	Cooper, C.R.
Project 3255	<b>The University's Catalytic Role for Business/Industry, Government and University Connections</b>	Cooper, C.R.

### Agricultural Economics

Project 442	<b>Economics of Agricultural Development and Economic Change</b>	Johnson, G.L.
Project 991	<b>Agricultural Institutions, Decision Processes And Information Systems</b>	Bonnen, J.T.
Project 996	<b>Assessments Of Consumer Reactions To New Food Products And Marketing Services</b>	Zehner, M.D.
Project 1046	<b>Analysis Of Agricultural Production And Farm Level Marketing Systems</b>	Black, J.R.
Project 1079	<b>Health Care Delivery Systems As They Serve Rural People</b>	Stevens, R.D.
Project 1173*	<b>Organization And Performance Of The U.S. Food Production And Distribution System</b>	Shaffer, J.D.
Project 1197	<b>Economic And Policy Factors Affecting Domestic And International Markets For United States Agricultural Products</b>	Sorenson, V.L.
Project 1229	<b>Improving Economic And Marketing Intelligence In The Food System</b>	Ferris, J.N.
Project 1254*	<b>Effect Of Changes in Transportation On Performance Of The U.S. Agricultural Transportation System</b>	Thompson, S.R.
Project 1329	<b>Improved Fruit And Vegetable Marketing Systems</b>	Ricks, D.J.
Project 1372	<b>Performance Of Natural Resource Management Institutions In The Context of Michigan's Economic Future</b>	Libby, L.W.
Project 1373	<b>Rural Development, Public Services And Regulations Economic Policy Issues Of Emerging Agricultural Biotechnologies</b>	Schmid, A.A.
Project 1403	<b>A Study Of Regulatory Decision-Making On Toxic Substances In The Food System</b>	van Ravenswaay, E.
Project 1423	<b>Economic Evaluation Of Financial Issues Facing Borrowers And Lenders Under Conditions Of Inflation</b>	Robison, L.J.
Project 1430*	<b>Evaluating Financial Markets For Agriculture</b>	Hardesty, S.
Project 1446*	<b>Analysis Of Food And Agricultural Policies In An Uncertain Economic Environment</b>	Sorenson, V.



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## Agricultural Economics (Continued)

Project 1449*	<b>An Economic Analysis Of Risk Management Strategies For Agricultural Production Firms</b>	Robison, L.
Project 1467*	<b>Implications Of Emerging Policy Issues And Market Developments For The North Central Dairy Industry</b>	Hamm, L.G.
Project 3083	<b>Tactical Decision Making For And The Application Of Computer And Communications Technology And Control Resource Firms</b>	Harsh, S.B.
Project 3131	<b>Agricultural Economics Research—Problems Of Less Developed Countries</b>	Connor, L.J.

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## Agricultural Engineering

Project 336	<b>Processing Of Biological Products</b>	Bakker-Arkema, F.W.
Project 1050*	<b>Principles And Technology For Handling And Sorting Fruits And Vegetables</b>	Segerlind, L.J.
Project 1066*	<b>Energy And By-Products From Livestock Wastes</b>	Gerrish, J.B.
Project 1181	<b>Engineering Considerations In Food Processing</b>	Steffe, J.F.
Project 1232	<b>Mechanical Harvesting, Handling Processing, And Storage Systems For Fruits And Vegetables</b>	Cargill, B.F.
Project 1361*	<b>Marketing And Delivery Of Quality Cereals And Oilseeds In Domestic And Foreign Markets</b>	Bakker-Arkema, F.W.
Project 1425	<b>Robotics In Agriculture</b>	Gerrish, J.B.
Project 1427*	<b>Irrigation Scheduling Methods For Efficient Water And Energy Use</b>	Bralts, V.F.
Project 1429	<b>Minimizing Energy Usage While Optimizing Environmental Conditions In Swine Confinement Systems</b>	Person, H.L.
Project 1431*	<b>Trickle Irrigation In Humid Regions</b>	Bralts, V.
Project 1465*	<b>Corn And Soybean Response To Drainage</b>	Merva, G.E.
Project 3070	<b>Climatology Of Michigan</b>	Nurnberger, F.V.
Project 3112	<b>Micro Modelling Of Appropriate Agricultural Mechanization Systems In Developing Countries</b>	Esmay, M.L.
Project 3142	<b>Land Management And Waste Disposal Effects On Water Quality</b>	Loudon, T.L.
Project 3177	<b>Crop Properties Related To Machine Design And Performance</b>	Srivastava, A.K.
Project 3178	<b>Development Of Machine Concepts For Mechanized Agriculture</b>	Ledebuhr, R.L.



## Animal Science

Project 44	<b>Biological And Biochemical Effects Of Certain Nutritional And Physical Factors On Swine</b>	Miller, E.R.
Project 102*	<b>Improving Dairy Cattle Through Breeding With Special Emphasis On Selection</b>	McGilliard, L.D.
Project 721	<b>Basis And Test Studies Utilizing Avian Species Other Than Poultry As Pilot Research Animals</b>	Coleman, T.H.
Project 797	<b>Reproductive Physiology, Endocrinology, And Cardiovascular Physiology In Aves</b>	Ringer, R.K.
Project 859	<b>Hormonal Control Of Reproduction In Cattle, Sheep And Swine</b>	Dukelow, W.R.
Project 1039	<b>Fur Animal Studies (Mink)</b>	Aulerich, R.J.
Project 1120*	<b>Improvement Of Beef Cattle Through Breeding Methods</b>	Magee, W.T.
Project 1156*	<b>Improving Large Dairy Herd Management Practices</b>	Speicher, J.A.
Project 1163	<b>Factors Controlling Growth And Lactation</b>	Tucker, H.A.
Project 1178	<b>Developing Breeding Strategies To Maximize Economic Gain In Dairy Enterprises</b>	Mao, I.L.
Project 1182*	<b>Factors Regulating Protein Synthesis, Degradation And Growth Skeletal Muscle</b>	Bergen, W.G.
Project 1196*	<b>Methods For Improvement Of Fertility In Cows Postpartum</b>	Fogwell, R.L.
Project 1226	<b>Protein And Amino Acid Nutrition And Metabolism In Ruminants</b>	Bergen, W.G.
Project 1244	<b>Rumen Microbial Fermentation Of Forages And Crop And Processing: Residue Phenolic Compounds</b>	Yokoyama, M.T.
Project 1278	<b>Improvement Of Design And Analysis Of Animal Experiments</b>	Gill, J.L.
Project 1291*	<b>Optimizing The Nutritional Utilization Of Forages By Dairy Cattle</b>	Thomas, J.W.
Project 1299	<b>Mechanism Of Testosterone And Growth Hormone Action On Muscle Growth</b>	Merkel, R.A.
Project 1315	<b>Production Of Steroids, Inhibin And Gonadotrobins During Development Of Dominant Follicles In Cattle</b>	Ireland, J.J.
Project 1318	<b>Utilization Of Fiber By Ruminants</b>	Cook, R.M.
Project 1377	<b>Photoperiodic Control Of Growth And Milk Yield In Cooperator Herds</b>	Tucker, H.A.
Project 1407	<b>A Genetic And Biometric Study Of The Lactation Curve In Dairy Cattle</b>	Anderson, C.R.
Project 1433	<b>Biological, Biochemical, Nutritional, And Environmental Factors Impacting On Avian Growth, Reproduction, And Metabolism</b>	Polin, D.
Project 1437	<b>Increasing Milk Solids Secretion</b>	Emery, R.S.
Project 1445*	<b>Redirecting The Nutrient Flow In Cows For Maximum Milk Production</b>	Emery, R.S.
Project 1450	<b>Poultry Disease Studies</b>	Chang, T.
Project 1463*	<b>The Control Of Food And Water Intake In Poultry</b>	Polin, D.
Project 3014	<b>Maximum Utilization Of Michigan Grown Roughages For Finishing Cattle</b>	Rust, S.R.

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## **Animal Science (Continued)**

Project 3047	<b>Feeding And Management Regimes For Efficient Utilization Of Michigan Feedstuffs By Beef Cattle</b>	Ritchie, H.D.
Project 3117	<b>Nutrition And Physiology Of The Horse</b>	Ullrey, D.E.
Project 3118	<b>Comparative Nutrition And Physiology Of Wild Animals</b>	Ullrey, D.E.
Project 3170	<b>Performance Of Simmental Cattle Under Northern Michigan Conditions</b>	Ritchie, H.D.
Project 3190	<b>Forage And Grain Utilization By Cattle In The Upper Peninsula</b>	Bucholtz, H.F.
Project 3217	<b>The Fate And Biological Effects Of Xenobiotics In Farm Animal Species</b>	Bursian, S.
Project 3258	<b>An Eggshell Quality Management System</b>	Balander, R.
Project 6833	<b>Intestinal P-cresol Production By Gnotobiotic Pigs Isolated From Pig Feces</b>	Yokoyama, M.
Project 6836	<b>Mastitis—Metritis—Agalactia (MMA) In Swine</b>	Miller, E.R.
Project 6837	<b>Development Of A Model. Examine Role Of Progesterone On Initiation Of Estrous Cycles In Cattle</b>	Ireland, J.
Project 6839	<b>Effects Of Caloric Deficit And Body Condition On Insulin And Progesterone In Heifers</b>	Fogwell, R.L.
Project 6840	<b>Embryo Separation Procedures For Production Of Normal Offspring</b>	Dukelow, W.R.
Project 7511	<b>Cortisol Inhibitor Of Normal Bovine Reproduction Postpartum</b>	Fogwell, R.L.
Project 7522	<b>Photoperiod-Induced Changes In Growth And Carcass Composition Of Steers</b>	Tucker, H.A.





## Biochemistry

Project 1167	<b>Development Of An Accurate Computerized Fluorimeter And Its Application To Chemical And Biochemical Problems</b>	Holland, J.F.
Project 1212	<b>The Molecular Basis For The Protective Action Of Polysaccharides In Winter Hardiness In Rye And Barley</b>	Kindel, P.K.
Project 1215	<b>The Role Of Carnitine Acyltransferases In The Regulation Of Cellular Metabolism</b>	Bieber, L.L.
Project 1218	<b>Comparative Enzymological Basis Of Animal Muscle Diseases</b>	Suelter, C.H.
Project 1219	<b>Plant Biochemistry And Plant Growth Regulators</b>	Tolbert, N.E.
Project 1220	<b>Carbohydrate Metabolism In Plants</b>	Anderson, R.L.
Project 1223	<b>The Effect Of Zinc Deficiency On Immune Response</b>	Luecke, R.W.
Project 1290*	<b>Cellular Photosynthetic Process And The Regulation Of Photosynthesis</b>	Tolbert, N.E.
Project 1350	<b>The Molecular Basis Of Leukemogenesis And Sarcomagenesis Of Chicken</b>	Kung, H.J.
Project 1452	<b>Development Of Quantitative Vapor Phase Methodology For Steroids</b>	Watson, J.T.
Project 1457	<b>Pig Hepatocyte Preparation Procedure—Hormones And Diet On Binding Phosphofructokinase To Membranes</b>	Deal, W.C.
Project 3215	<b>Biochemical Mechanisms Of Toxicity</b>	Aust, S.D.
Project 8015	<b>Lectin Receptors And Cytoskeletal Proteins In Soybean Cells</b>	Wang, J.L.

## Botany & Plant Pathology

Project 417	<b>Investigations On Heritable Resistance To Several Diseases Of Grains</b>	Hart, L.P.
Project 919	<b>Interactions Of Viruses And Cells</b>	Murakishi, H.H.
Project 922	<b>Physiology Of Disease Development And Disease Resistance In Plants</b>	Scheffer, R.P.
Project 926	<b>Reactions Of Isolated Chloroplasts And The Role Of Auxin Conjugation In Cellular Differentiation</b>	Good, N.E.
Project 953	<b>Effect Of Energy Stress In Soil On The Ecology Of Root-Infecting Fungi</b>	Lockwood, J.L.
Project 962	<b>Tree Fruit Disease Control By Chemicals And Other Means</b>	Klos, E.J.
Project 1040	<b>Turfgrass Pathology</b>	Vargas, J.M., Jr.
Project 1077	<b>The Use Of Remote Sensing Techniques For The Detection Of Crop Stress (Disease And Water)</b>	Safir, G.R.
Project 1111	<b>Diseases Of Vegetable And Mint Crops And Their Control</b>	Lacy, M.L.
Project 1125*	<b>Virus And Virus-Like Diseases Of Woody, Deciduous Fruit Crops</b>	Jones, A.L.
Project 1133	<b>Bean Disease Investigations</b>	Saettler, A.W.

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## Botany & Plant Pathology (Continued)

Project 1176	Development Of Disease Resistant Trees Through Selection And Breeding	Hart, J.H.
Project 1206*	Biological Control Of Soil-Borne Plant Pathogens In Integrated Crop Management Systems	Lockwood, J.L.
Project 1225*	The Dynamics And Energetics Of The Soil Plant Atmosphere Continuum	Safir, G.R.
Project 1255*	Detection, Survival, And Control Of Plant Pathogenic Bacteria On Seeds And Other Plant Parts	Klos, E.J.
Project 1259*	Occurrence Of Mycotoxins In Feeds And Foods And Their Effects On Animal And Human Health	Hart, L.P.
Project 1353	Pesticide Impact Assessment Program	Bird, G.
Project 1408*	Biological Improvement Of Chestnut ( <i>Castanea</i> Sp.)	Fulbright, D.W.
Project 1410	Physiology Of Resistance And Induced Resistance To Disease In Potato	Hammerschmidt, R.
Project 1422	Diseases Of Field Crops—Biology And Control	Hart, L.P.
Project 3071	Investigations On Diseases Of Wheat	Fulbright, D.W.
Project 3123	Etiology, Epidemiology And Control Of Fungal Diseases Of Small Fruit Crop Diseases	Ramsdell, D.C.
Project 3183	Management Of Pome Fruit Diseases	Jones, A.L.
Project 3184	Stone Fruit Diseases And Their Controls	Jones, A.L.
Project 3247	Breeding And Selection Of New Grape Cultivars For Michigan	Good, N.
Project 7503	An Integrated Approach To Blueberry Shoestring Virus Disease Control	Ramsdell, D.C.
Project 7521	Asparagus Decline Syndrome And Replant Problem In Michigan	Stephens, C.
Project 8016	Plastome-Genome Incompatibility And Recombination Of Chloroplast DNAs	Sears, B.B.
Project 8017	Genetic Resistance To Virus Disease In Somatic Cells Of Crop Plant Species	Murakishi, H.R.

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## Chemistry

Project 8005	Change Separation And Stabilization In Chloroplast Photosystem II	Babcock, G.
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## Chemical Engineering

Project 9501	Gas Phase HF Saccharification Of Lignocellulosic Materials	Hawley, M.
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## Crop & Soil Sciences

Project 22	<b>Physical Stress On Crops—Its Detection, Evaluation And Correction</b>	Erickson, A.E.
Project 77	<b>Soil Problems Encountered In Growing Plants In Greenhouses</b>	Warncke, D.D.
Project 115	<b>Corn Breeding, Improvement, And Genetics</b>	Rossmann, E.C.
Project 268	<b>Organic Soil Investigations</b>	Warncke, D.D.
Project 274	<b>Soil Management Investigations For Sod Production And Turf</b>	Rieke, P.E.
Project 319	<b>Classification, Genesis, And Evaluation Of Michigan Soils</b>	Mokma, D.L.
Project 427	<b>Micronutrient Status Of Michigan Soils</b>	Knezek, B.D.
Project 459	<b>Clay Amendments On Sand Soils</b>	Erickson, A.E.
Project 569	<b>Breeding Small Grain Varieties For Michigan</b>	Everson, E.H.
Project 611	<b>Farm Crop Studies In Upper Michigan</b>	Leep, R.H.
Project 733	<b>Physiology, Establishment, Management, And Nutritional Value Of Forages</b>	Tesar, M.B.
Project 739	<b>Cultural And Management Factors Affecting Potato Quality</b>	Chase, R.W.
Project 908	<b>Fundamental Factors In Cultural And Chemical Weed Control, Weed Competition, And Weed Life Cycles</b>	Meggitt, W.F.
Project 960	<b>Weed Control: A Component Of Pest Management And Field Crop Production Systems As Related To Chemical And Cultural Practices</b>	Kells, J.J.
Project 1013	<b>Improved Dry Bean Varieties To Serve The Bean Growers And Bean Industry Of Michigan</b>	Adams, M.W.
Project 1042*	<b>Origin, Transformation, And Management Of Nitrogen In Soils, Waters, And Plants</b>	Tiedje, J.M.
Project 1063*	<b>Fate Of Nutrients In The Environment As Affected By Soil And Crop Management</b>	Ellis, B.G.
Project 1098*	<b>Relating Soil Wetness To Selected Soil And Landscape Features And To Land Use Decisions</b>	Mokma, D.L.
Project 1103	<b>Adsorption, Transformation And Release Of Inorganic Nutrients By Soils</b>	Ellis, B.G.
Project 1124	<b>Plants Nutrients And Their Interaction</b>	Vitosh, M.L.
Project 1137*	<b>Optimum Utilization Of Sewage Sludge On Agricultural Land</b>	Jacobs, L.W.
Project 1144*	<b>Forage Production And Utilization Systems As A Base For Beef And Dairy Cattle Production</b>	Tesar, M.B.
Project 1170	<b>Sugarbeet Storage</b>	Hogaboam, G.J.
Project 1192*	<b>Integrating Crop Culture, Chemicals, And Life Cycles To Control Persistent Weeds</b>	Kells, J.J.
Project 1210	<b>Identification Of Soil Environments Which Stress Plant Root Systems</b>	Smucker, A.J.M.
Project 1354	<b>Carbon And Water Use Efficiencies By Stressed Varieties Of Drybean And Sugarbeet Varieties</b>	Smucker, A.J.M.
Project 1411*	<b>Development And Evaluation Of Conservation Tillage Systems</b>	Erickson, A.E.
Project 1420	<b>Fate Of Natural And Synthetic Organic Chemicals In Soils And Waters</b>	Boyd, S.A.



## Crop & Soil Sciences (Continued)

Project 1455	<b>Maximizing Crop Production Efficiency Through Field Testing And Model Building</b>	Kells, J.J.
Project 1458*	<b>Gains, Losses And Management Of Soil Nitrogen</b>	Tiedje, J.M.
Project 1462*	<b>Soil Productivity And Erosion</b>	Mokma, D.
Project 1470	<b>Physiology And Metabolism Of Plant Growth Regulators And Agricultural Chemicals In Turf</b>	Branham, B.E.
Project 1471*	<b>Chemistry And Bioavailability Of Waste Constituents In Soils</b>	Jacobs, L.W.
Project 3062	<b>Turfgrass Breeding</b>	Payne, K.T.
Project 3065	<b>Physiology And Biochemistry Of Herbicide Action, Selectivity, And Degradation</b>	Penner, D.P.
Project 3084	<b>Ecology And Metabolism Of Pesticides By Soil Microorganisms</b>	Tiedje, J.M.
Project 3096	<b>Clay Mineral Investigations</b>	Mortland, M.M.
Project 3122	<b>Development And Correlation Of Soil Test Procedures With Crop Yields And Plant Nutrient Contents</b>	Warncke, D.D.
Project 3128	<b>Systems Of Cropping</b>	Christenson, D.R.
Project 3181	<b>Appraising The Resource Value Of Waste Materials To Develop Greater Utilization On Agricultural Soils</b>	Jacobs, L.W.
Project 3253	<b>Computer Simulation Of Soil Water Infiltration Into Michigan Soils</b>	Kunze, R.J.
Project 3260	<b>Crop Management Studies In Northern Michigan</b>	Leep, R.H.
Project 3262	<b>Soybean Variety Testing</b>	Isleib, T.G.
Project 3265	<b>Breeding Soybean Cultivars For Michigan</b>	Isleib, T.G.
Project 7524	<b>Improved Production And Utilization Technology For Michigan Potatoes</b>	Chase, R.
Project 8014	<b>The Pathway Of Microbial Denitrification</b>	Tiedje, J.M.

## Entomology

Project 78	<b>Insect Vectors Of Crop Plant Diseases: Identification Characterization And Mechanism Of Transmission</b>	Whalon, M.E.
Project 193	<b>Fruit Tree Insects</b>	Howitt, A.J.
Project 401	<b>Agriculture And Crop Pollination</b>	Hoopingarner, R.A.
Project 446	<b>Nematode Population Management In Michigan Crop Production</b>	Bird, G.W.
Project 1067*	<b>Weather And Climate Research For Agricultural Decision Making In The North Central Region</b>	Gage, S.
Project 1108	<b>Integrated Control Of Tree Fruit Pests</b>	Whalon, M.E.
Project 1187	<b>Biological Control Of Selected Major Insect Pests In Michigan</b>	Stehr, F.W.
Project 1190	<b>Biological And Environmental Monitoring For Pest Management</b>	Gage, S.H.



## Entomology (Continued)

Project 1194	<b>Management Of Field And Forage Crop Insects In Michigan</b>	Ruppel, R.F.
Project 1213	<b>Management Of Forest Defoliating Insects And Related Secondary Insects</b>	Simmons, G.A.
Project 1275	<b>Models For The Management Of Agro-Ecosystems</b>	Tummala, R.L.
Project 1294*	<b>Black Fly Damage Thresholds, Biology And Control</b>	Merritt, R.W.
Project 1296	<b>Dynamic Damage Assessment To Crops From Insect Defoliation</b>	Gage, S.H.
Project 1306*	<b>Integrated Management Of Plant Parasitic Nematodes</b>	Bird, G.W.
Project 1322	<b>Biology And Management Of Insect Pests Of Vegetable Crops</b>	Grafius, E.J.
Project 1331*	<b>Reduction Of Corn Losses Caused By Nematodes In The North Central Region</b>	Bird, G.W.
Project 1360	<b>Design And Analysis Of Assessment Systems For Biologically Induced Crop Losses—Phase II</b>	Haynes, D.L.
Project 1435	<b>Factors Determining Host Finding, Acceptance, And Suitability For Insect Behaviors</b>	Miller, J.R.
Project 1440*	<b>Analysis Of Production Systems And IPM Research Needs In The North Central Region</b>	Bird, G.W.
Project 1460*	<b>Incidence, Biology, And Management Of The Pine Wilt Complex</b>	Bird, G.W.
Project 1488*	<b>The Gypsy Moth And Its Natural Enemies: Behavioral And Population Determinants</b>	Simmons, G.A.
Project 1489*	<b>Impact Of Integrated Crop Management Practices on European Corn Borer And Related Stalk Boring Insects</b>	Ruppel, R.F.
Project 3016	<b>Population Dynamics And Management Of The Cereal Leaf Beetle</b>	Gage, S.H.
Project 3114	<b>Management Of Man Biting Insect Problems In Michigan</b>	Newson, H.D.
Project 3269	<b>Using Behavior To Improve Pesticide Efficiency And Reduce Nontarget Impact</b>	Ayers, G.
Project 7512	<b>Spruce Budworm Technology Transfer In The Lake States</b>	Simmons, G.A.
Project 8000	<b>Biotic And Abiotic Stress Interactions Between A Small Grain Crop And An Insect Defoliator</b>	Gage, S.H.
Project 8011	<b>Quantifying Sensory Determinants Mediating Oviposition By The Onion Fly</b>	Miller, J.R.
Project 8023	<b>The Design And Analysis Of Alternative Production Systems To Manage The Colorado Potato Beetle</b>	Haynes, D.L.

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## Family & Child Ecology

Project 1115	<b>Development Of Guidelines For Creating Resource Centers In Rural Communities</b>	Earhart, E.M.
Project 1394*	<b>A Study Of Beliefs About Parenting In Rural And Urban Populations</b>	Boger, R.P.
Project 1424*	<b>Stress, Coping, And Adaptation In The Middle Years Of The Family Life Cycle</b>	Bubolz, M.
Project 1439*	<b>Dynamics Of Life Plans And Attainment Of Low-Income Youth, A Longitudinal Analysis</b>	Schiamberg, L.
Project 3251	<b>Profile Of Michigan Youth 10-14 Years Of Age</b>	Keith, J.G.

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## Fisheries & Wildlife

Project 940	<b>Ecological Relationships Of Pesticides, Radionuclides, And Nutrients With Organisms In Aquatic Community</b>	Kevern, N.P.
Project 1312	<b>Environmental Impacts On Fish Ecology In Nearshore And Connecting Waters Of Upper Great Lakes</b>	Liston, C.R.
Project 1385	<b>Effects On Wildlife Of Biomass Fuel Production In Michigan Forests</b>	Haufler, J.B.
Project 1387	<b>Mechanistic Factors Determining Aquatic Fertility</b>	King, D.L.
Project 1409	<b>Ecology, Population Dynamics And Management Of Michigan Fishes And Their Food Organisms</b>	Taylor, W.W.
Project 1484	<b>Mensuration And Management Statistics Of Large Mammal Populations</b>	Taylor, M.K.
Project 3077	<b>Environmental And Genetic Components Of Reproduction In Bird Populations</b>	Prince, H.H.
Project 3248	<b>Improving Productive Public Involvement In Agriculture And Natural Resource Problem Solving</b>	Peyton, R.B.
Project 3254	<b>Nutritional Requirements For Fishes Cultured In Michigan</b>	Garling, D.
Project 3264	<b>Aquatic Productivity. Light In Lakes And Ponds</b>	McNabb, C.D.





## Food Science & Human Nutrition

Project 457	<b>The Effects Of Composition Upon Meat Quality</b>	Pearson, A.M.
Project 584	<b>Chemical Changes As Related To Quality Factors In Meats</b>	Pearson, A.M.
Project 603	<b>Physical And Chemical Factors Related To Stability Of Processed Foods</b>	Stine, C.M.
Project 679	<b>Effect Of Processing On Food Composition And Quality</b>	Markakis, P.
Project 1036	<b>Microorganisms In Foods And Food Processing</b>	Pestka, J.J.
Project 1043	<b>Potentials For Removing Or Reducing Pesticide Residues In Food</b>	Zabik, M.E.
Project 1150	<b>Comparative Aspects Of Nutrition And Lipid Metabolism</b>	Romsos, D.R.
Project 1165*	<b>Quality And Nutritive Value Of Processed Potatoes</b>	Cash, J.N.
Project 1174*	<b>Food Quality And Energy Usage In Foodservice Systems—Microwave And Convective Thermal Processing</b>	Zabik, M.E.
Project 1193	<b>Dietary Factors Affecting Gastrointestinal Function And Utilization Of Nutrients</b>	Chenoweth, W.C.
Project 1209	<b>Quality Of Fresh And Processed Meat Products</b>	Price, J.F.
Project 1211	<b>Dietary Fat/Carbohydrate Relationships To Selected Health Parameter</b>	Schemmel, R.A.
Project 1231	<b>Physical And Chemical Characteristics Of Food Systems</b>	Brunner, J.R.
Project 1233	<b>Functional Properties And Utilization Of New Or Improved Fish And Egg Products</b>	Smith, D.
Project 1237*	<b>Nutritive Composition, Quality, Stability And Efficient Production Of Poultry Products And Egg Products</b>	Smith, D.
Project 1242	<b>Nutritional Factors Pre- And Postnatally Influencing Organ Development And Function</b>	Bond, J.T.
Project 1245*	<b>Improvement Of Thermal Processes For Food</b>	Heldman, D.R.
Project 1323	<b>Process Efficiency, Quality, And Nutrient Composition Of Fruit And Vegetable Products</b>	Uebersax, M.A.
Project 1344	<b>The Effects Of Processing, Cooking And Storage On The Acceptability And Safety Of Food Products</b>	Gray, J.I.
Project 1352	<b>Retention And Loss Of Flavor Components From Foods</b>	Gulke, E.A.
Project 1374	<b>Characterization And Utilization Of Dry Heated Navy Bean Flour</b>	Uebersax, M.A.
Project 1395	<b>Function Of Lipases In Cheeses And Fermented Dairy Products</b>	Partridge, J.A.
Project 1396	<b>Foodservice Systems. Information Equipment And Personnel</b>	Sawyer, C.A.
Project 1413	<b>Metabolism And Function Of Vitamin A</b>	Zile, M.H.
Project 1416*	<b>U.S. Food Demand And Consumption Behavior</b>	Zabik, M.E.
Project 1419	<b>Processing Treatments Influencing Functional Properties And Utilization Of Muscle Foods</b>	Booren, A.M.
Project 1444*	<b>Modification Of Human Diets Designed To Affect Lipid Metabolism</b>	Romsos, D.
Project 1448	<b>Microbial Food-Borne Diseases</b>	Pestka, J.
Project 1477	<b>Biochemical Role(s) Of Retinoids In Cholesterol Metabolism</b>	Ott, D.B.

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## Food Science & Human Nutrition (Continued)

Project 1480	<b>Pantothenic Acid Nutriture In Human Beings: Requirement, Absorption And Metabolism</b>	Song, W.O.
Project 1483	<b>Effects Of Changes On Engineering Properties Of Biological Materials During Processing And Storage</b>	Morgan, R.G.
Project 3092	<b>Effects Of Raw Material, Processing, And Storage Factors On Food Quality</b>	Wishnetsky, T.
Project 3202	<b>Relationship Of Diet And Intestinal Cancer</b>	Bennink, M.R.
Project 3221	<b>Processing And Quality Evaluation Of Fruits And Vegetables</b>	Cash, J.N.
Project 3245	<b>Energetic And Economic Evaluations Of Membrane Separations For Alcohol Plants</b>	Grulke, E.A.
Project 6838	<b>Animal Mycotoxicoses: Prevention And Therapy</b>	Pestka, I.J.
Project 7514	<b>Mechanisms And Precursors Of N-Nitrosamine Formation In Cured Meats</b>	Gray, I.J.
Project 7515	<b>Utilization And Market Development Of Dry Heated Edible Bean Flour Fractions</b>	Uebersax, M.
Project 7519	<b>Immunochemical Methods For The Diagnosis And Prevention Of Swine Mycotoxicoses</b>	Pestka, J.J.
Project 8006	<b>Metabolism And Function Of Retinoic Acid In The Small Intestine</b>	Zile, M.H.
Project 8008	<b>Factors Affecting Copper Balance And Status In The Elderly</b>	Chenoweth, W.L.



## Forestry

Project 936	<b>Physiological Genetic Studies Of Forest Trees</b>	Hanover, J.W.
Project 978	<b>Financial Evaluation Of Forest Management Opportunities</b>	Marty, R.J.
Project 1048	<b>Fiberbonding In Fiberboard Manufacture</b>	Suchsland, O.M.
Project 1100*	<b>Forest Tree Improvement Through Selection, Breeding, And Seed Production Phase V</b>	Hanover, J.W.
Project 1148	<b>Development Of Techniques In Forest Biometry</b>	Ramm, C.W.
Project 1149	<b>Timber Market Dynamics</b>	Manthy, R.S.
Project 1180	<b>Ecological Factors Affecting Tree Productivity</b>	Pregitzer, K.S.
Project 1198	<b>Biology Of Terpenes In Woody Plants</b>	Hanover, J.W.
Project 1207	<b>Growth, Yield, And Physiology Of Intensively Grown Tree Species In Michigan</b>	Dickmann, D.I.
Project 1362	<b>Mechanical Properties Of Solid Wood And Wood Fiber Products</b>	Sliker, A.W.
Project 1438	<b>Enhancing Amenity Values Of Urban And Rural Trees</b>	Kielbaso, J.J.
Project 1447*	<b>Chemistry Of Atmospheric Deposition—Effects On Agriculture, Forestry, Surface Waters, And Materials</b>	Hart, J.B.
Project 1469	<b>Forest Soil Evaluation And Management Using Agro-Chemicals, Soil Amendments And Cultural Practices</b>	Hart, J.B.
Project 1485	<b>Stress And Strain Measurements In Wood And Wood Products</b>	Sliker, A.
Project 3157	<b>Accelerating Tree Growth Through Breeding And Intensive Culture</b>	Hanover, J.W.
Project 3162	<b>Production Efficiency In The Industrial Use Of Wood</b>	Huber, H.A.
Project 3273	<b>Michigan Woodlands Management</b>	Marty, R.

## Geography

Project 3249	<b>Climatology Of Late Spring Freezes In The Lower Peninsula Of Michigan</b>	Harmon, J.
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## Horticulture

Project 650	<b>Modification Of Tree Fruits To Facilitate Mechanization Of Cultural Practices</b>	Hull, J., Jr.
Project 792	<b>Cultural Practices For Vegetables To Facilitate Mechanized Production And Harvest Procedures</b>	Price, H.C.
Project 909	<b>Biology, Ecology, And Management Of Weed Pests In Horticultural Cropping Systems</b>	Putnam, A.R.
Project 935	<b>Effects Of Biologically Active Chemicals On Plant Growth And Development</b>	Bukovac, M.J.



## Horticulture (Continued)

Project 1012	Breeding Cole Crops, Celery, Field Tomato, Pepper, Snap Bean And Greenhouse Tomato And Lettuce	Honma, S.
Project 1045	Controlling Yield And Quality Of Deciduous Tree Fruits	Dennis, F.G., Jr.
Project 1153*	Quality Maintenance, And Control In The Marketing And Storage Of Vegetables	Herner, R.C.
Project 1155*	Postharvest Physiology Of Fruits	Dilley, D.R.
Project 1222*	Introduction, Multiplication, Preservation, Cataloguing And Utilization Of Plant Germplasm	Iezzoni, A.
Project 1272	Physiology Of Carbon Balance In Deciduous Fruit Trees	Flore, J.A.
Project 1305*	Rootstock And Interstem Effects On Pome And Stone Fruit Tree Growth And Fruiting	Perry, P.
Project 1325	Cole Crop Production And Culture	Zandstra, H.H.
Project 1380	Strawberry, Blueberry And Bramble Improvement	Hancock, J.F.
Project 1386	Breeding And Genetics Of Floriculture Plants	Ewart, L.C.
Project 1397*	Development And Evaluation Of Conservation Tillage Systems	Putnam, A.
Project 1428	Stone Fruit Breeding	Iezzoni, A.F.
Project 1461*	Freeze Damage And Protection Of Fruit And Nut Crops	Howell, G.S.
Project 1468	Mineral Nutrition Of Vegetable Crops	Widders, I.E.
Project 3012	Chemical Regulation Of Growth And Nitrogen Metabolism In Plants	Ries, S.K.
Project 3031	Environmental And Physiological Variables Effect On Growth Quality And Marketability Of Flower Crops	Carlson, W.H.
Project 3218	Manipulation Of Viticulture To Achieve Maximum Quality, Yield, And Resistance To Freeze Damage	Howell, G.S.
Project 3227	Adaption Of Fruit Cultural Practices To Northern Michigan Conditions	Kesner, C.D.
Project 3231	Protoplast Isolation, Culture, Regeneration To Plants And Somatic Hybridization Of Horticultural Plants	Sink, K.C.
Project 3266	Breeding And Genetics Of Onions	Ewart, L.C.
Project 3270	Postharvest Storage Of Field Grown Hardy Herbaceous Perennials And Woody Ornamentals	Cameron, A.C.
Project 3272	Physiological And Environmental Factors Influencing Growth And Development Of Flower Crops	Heins, R.D.
Project 7523	Tree Decline And Reduced Production Of Cherry And Peach Trees In Michigan	Flore, J.A.

## Human Ecology

Project 3152	Function Of The Family Ecosystem In A World Of Changing Energy Availability	Gladhart, P.M.
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## Human Environment & Design

Project 1375	<b>Energy Consumption In The American Household 1900 To 1977</b>	Morrison, B.M.
Project 1442*	<b>Limiting Pesticide Exposure Through Textile Cleaning Procedures And Selection Of Clothing</b>	Slocum, A.
Project 3256	<b>Toward Achieving Michigan's Rural Employment Potential—The Role Of Resort Area Retailing</b>	Witter, B.S.
Project 3261	<b>Family Adaptation To Changing Resources And Environments Improving Quality Of Life In Rural Areas</b>	Sontag, M.S.

## Kellogg Biological Station

Project 8018	<b>Plant Performance In Multi-Crop And Crop-Weed Systems Application Of The Reciprocal Yield Law</b>	Werner, P.A.
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## Large Animal Clinical Sciences

Project 1316	<b>Trace Element Interactions And The Relative Influence Of Cupric And Sulfate Ions On Selenium Metabolism</b>	Stowe, H.D.
Project 1332	<b>Identification Of Endocrine And Uterine Factors Which Can Be Used For Diagnosis</b>	Nachreiner, R.F.
Project 1356	<b>Prevention Of Neonatal Calf Mortality</b>	Mather, E.C.
Project 1415*	<b>Infectious Agents Affecting Reproduction In Cattle</b>	Gibson, C.D.
Project 1434	<b>Bovine Hepatic Lipidosis Studies</b>	Herdt, T.H.
Project 6805	<b>Preliminary Survey Of The Prevalence Of Bovine Leukosis In Michigan Dairy Cattle</b>	Kaneene, J.B.
Project 6808	<b>Prevalence And Economic Importance Of Fascioloides Infection In Michigan Livestock</b>	Schillhorn Van Veen, T.
Project 6809	<b>Evaluation Of Cost Benefits Of Animal Health Care</b>	Mather, E.C.
Project 6832	<b>Significance Of The Genetic Predisposition Of Pigs To Hypo-And Hyperseleminemia</b>	Stowe, H.
Project 6835	<b>Preliminary Investigations On The Incidence And Immunodiagnosis Of Lungworm Infections</b>	Schillhorn Van Veen, T.
Project 7506	<b>Anthelmintic Treatment Of Dairy Cows Effect On Hormonal Determinants Of Milk Yield</b>	Schillhorn Van Veen, T.
Project 7518	<b>Economic Impact And Cost Benefit Analysis Of Bovine Mastitis</b>	Bartlett, P.C.
Project 7520	<b>Role Of Endotoxin And Neutrophils In Bovine Pneumonic Pasteurellosis</b>	Robinson, N.

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## Microbiology & Public Health

Project 1136	<b>Herpesvirus Disease—Antigens In Cells Infected With Marek's Disease Herpesvirus</b>	Velicer, L.F.
Project 1177	<b>Biochemical Symbiosis Between Termites And Their Intestinal Microbes</b>	Breznak, J.A.
Project 1300	<b>Studies On Bacterial Degradation Of Lignin</b>	Reddy, C.A.
Project 1314	<b>Host-Symbiont Recognition In The Nitrogen-Fixing Rhizobium-Clover Symbiosis</b>	Dazzo, F.B.
Project 1371	<b>Evaluation Of An In Vivo Model To Study Latent Infections Caused By Pseudorabies Virus</b>	Maes, R.K.
Project 1443	<b>Swine Intestinal Organ Cultures As An In Vitro Model To Study Transmissible Gastroenteritis Of Swine</b>	Maes, R.K.
Project 1453	<b>Structure/Function Relationships In Chicken Globin And Histone Genes</b>	Dodgson, J.
Project 1473*	<b>Gains, Losses And Management Of Soil Nitrogen</b>	Dazzo, F.
Project 1481	<b>Characterization And Inhibition Of Bacterial Urease</b>	Hausinger, R.P.
Project 3116	<b>Bacterial Ecology—Diverse Energy Reactions And Regulation In Bacteria</b>	Uffen, R.L.
Project 3119	<b>Physiology Of Sporulation In The Bacillaceae</b>	Sadoff, H.L.
Project 3120	<b>Microbial Decomposition Of Organic Matter In Aquatic Systems</b>	Klug, M.J.
Project 3257	<b>Genetic Engineering Of Rhizobium Japonicum, The Soybean Symbiont, For Improved Agronomic Properties</b>	Chelm, B.K.
Project 6827	<b>Experimental Parasitology</b>	Williams, J.F.
Project 7513	<b>Recombinant DNA And Chemically Synthesized Vaccines Against Marek's Disease</b>	Velicer, L.

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## MSU-DOE Plant Research Lab

Project 1388	<b>Triazine Herbicide Resistance Caused By Chloroplast Membrane Changes</b>	Arntzen, C.J.
Project 1464	<b>Molecular Basis Of Disease Resistance To Powdery Mildew In Barley</b>	Somerville, C.R.
Project 8012	<b>Directed Genetic Modification Of RuBP Carboxylase/Oxygenase</b>	Somerville, C.R.
Project 8013	<b>Genetic Regulation Of The Rhizobium/Legume Symbiosis</b>	Chelm, B.K.

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## Packaging

Project 1405	<b>Transport Properties Of Plastics As Related To The Quality And Storage Stability Of Packaged Products</b>	Giacin, J.R.
Project 3108	<b>Control Of Damage And Loss In Distribution</b>	Goff, J.W.





## Park & Recreation Resources

Project 340	<b>Park Facilities</b>	Moncrief, L.W.
Project 1105	<b>Recreation Use Of Private Land—Its Role In Rural Development</b>	Moncrief, L.W.
Project 1378	<b>Recreation Resource Economics. The Relationship Between Agriculture And Tourism In Michigan</b>	Moncrief, L.W.
Project 1392*	<b>Impacts Of Tourism On Rural Economic Development</b>	Stynes, D.J.
Project 1432	<b>Impact Of Forest Management On Recreation And Tourism In Local Economics</b>	Holecek, D.F.
Project 1436	<b>Psychology Of Recreation And Tourism. The Relationship Between The People And The Resource</b>	Fridgen, J.D.
Project 3233	<b>Energy Relationships And Alternatives For Michigan's Recreation-Tourism Industry</b>	Fridgen, J.D.

## Pathology

Project 1154*	<b>Prevention And Control Of Enteric Diseases Of Swine</b>	Waxler, G.L.
Project 1289	<b>Role Of Vitamin E And Selenium In Improving Livability Of Pigs</b>	Whitehair, C.K.
Project 1307	<b>Pathologic Effects Of Chemicals Of Importance To Michigan Agriculture</b>	Sleight, S.D.
Project 1333	<b>Mechanisms Of Pulmonary Damage In Neonatal Calves Exposed To Pasteurella Hemolytica Pathology</b>	Slocombe, R.F.
Project 1417*	<b>Bovine Respiratory Diseases</b>	Slocombe, R.F.
Project 1479	<b>Alterations Of Functional Vitamin A Metabolism In PBB-Exposed Rats</b>	Jensen, R.
Project 6800*	<b>Inherited Resistance To Neonatal Escherichia Coli Diarrhea In The Pig</b>	Waxler, G.L.

## Pesticide Research Center

Project 1309	<b>Toxic Effect Of Chlorinated And Pyrethroid Pesticides</b>	Matsumura, F.
Project 1364	<b>North Central Leader Laboratory Program For Minor Use Pesticides Research, To Supplement The IR-4 Project</b>	Matsumura, F.
Project 1412	<b>Processes Affecting Pesticides And Other Organics In Soil And Water Systems</b>	Zabik, M.
Project 1414	<b>Fates And Effects Of Trace Contaminants In Aquatic Systems</b>	Giesy, J.P.
Project 1451	<b>Molecular Aspects Of Aluminum Toxicity In Plant Cells</b>	Haug, A.
Project 7509	<b>North Central Leader Laboratory Program For Minor Use Drug Research To Supplement The IR-4 Program</b>	Matsumura, F.

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## Physiology

Project 3097	<b>Mechanisms Of Neuroendocrine And Endocrine Regulation Of Reproduction And Metabolism</b>	Riegle, G.D.
Project 3259	<b>Toxic Effect Of Environmental Chemicals On Immune Responses Of Fish</b>	Fromm, P.O.

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## Resource Development

Project 174	<b>Michigan's Water Resources</b>	Humphrys, C.R.
Project 1075	<b>Spatial Economic Analysis Of Natural Resources</b>	Chappelle, D.E.
Project 1093	<b>Assembly And Cataloging Of Primary And Secondary Data For Community Decision Making</b>	Kimball, W.J.
Project 1102	<b>Interaction And Conflicts Between Law And Government And Science And Technology</b>	Bronstein, D.A.
Project 1168	<b>Use Of Remote Sensing For Land Use Policy Formulation</b>	Schultink, G.
Project 1285	<b>Comprehensive Resources Inventory And Evaluation System</b>	Schultink, G.
Project 3235	<b>Mineral Land Development, Energy Requirements And Environmental Impacts</b>	Kakela, P.J.
Project 3267	<b>Sustainable Agriculture: The Role Of Bio-Management In Agricultural Systems</b>	Edens, T.C.
Project 3268	<b>Impact Of Extension Leadership Program &amp; Factors Associated With Leadership Effectiveness</b>	Thullen, M.

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## Sociology

Project 1062*	<b>Population Redistribution In The Non-Metropolitan Areas Of The North Central Region</b>	Beegle, J.A.
Project 1476*	<b>Socioeconomic Dimensions Of Technological Change, Natural Resource Use, And Agriculture Structure</b>	Schwarzweiler, H.K.
Project 3165	<b>Michigan County And Place Characteristics—1930-1980</b>	Harris, C.K.
Project 3222	<b>Changing Structure Of Agriculture</b>	Schwarzweiler, H.K.
Project 3234	<b>Aspects Of Small Scale Primary Production In Michigan</b>	Harris, C.K.
Project 3263	<b>The Human Dimensions Of Toxic Materials In Michigan Agriculture</b>	Morrison, D.E.

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## Zoology

Project 8019	<b>The Genetics Of Host Selection In Rhagoletis Fruit Flies</b>	Bush, G.
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# List of MAES Contributors

## July 1, 1984 to June 30, 1985

Abbott Laboratories

Adam, Nor Mariah

Adkin, Glenn & Marian

Agdia, Inc.

Agency for International Development

Agricultural Sales, Inc.

Agriculture, U.S. Dept. of

Air Force, U.S. Dept. of

Amax Copper, Inc.

American Cyanamid Company

American Farm Products

American Federation of Aviculture

American Florists Endowment

American Hoechst Corp.

American Soybean Assoc. Research Found.

Anheuser-Busch, Inc.

Applied Research Group, Inc.

Aquatrols Corp. of America

Arend, John & Viola

Asgrow Seed Co.

BASF Wyandotte Corporation

Bawers Equipment Co.

BEI, Inc.

Blount Foundation

Borden Chemical Co.

Campbell Soup Co.

Canola Council of Canada

Celery Research, Inc.

Ceva Labs

Chevron Chemical Co.

Ciba-Geigy Corporation

Citrus Research Board

Consumers Power Co.

Cooperative Elevator Co.

Country Queen Foods, Inc.

Dairy Research Found.

Dedoes Industries

Deere and Company

Denniston, L. & Sons, Inc.

Detroit Edison Co.

Dow Chemical Co.

Dow-Corning Corp.

Dow Foundation, Herbert & Grace

Environmental Protection Agency

Evans, Amon Carter

Evenflo Products

Ewos A.B.

Fleischmann Malting Co., Inc.

Food Machinery & Chem. Corp.

Ford Motor Company

Forest Wildlife Foundation

Foundation For Agronomic Research, Inc.

Frit Industries

Genesee County

Gerber Products Company

Gerstacker, Rollin Foundation

Gibbett Hill Foundation

Gladwin, City of

Gloeckner, Fred C. Foundation

GLS Region V Plan & Dev. Comm.

Golf Course Superintendents Assn.

Grace, W.R. & Co.

Grand River Grain Co.

Great Lakes Fisheries Commission



Great Lakes Fisheries Dev. Fdn.

Great Lakes Hybrids, Inc.

Growmark, Inc.

Haga, Earl

Hansens, CHR Laboratory

Harvard University

Hedrick, Ted I.

Heinz, H.J. Co.

Hill, Joseph H. Memorial Foundation

Hilltop Farms

Hilton-Davis Chemical Co.

Hodas, Ernest

Holstein Friesian Association

Hyclone Laboratories

ICI America, Inc.

Idaho, University of

Illinois, University of

Inari, Ltd.

Interior, U.S. Dept. of the

International Business Machines Corp.

International Dwarf Fruit Tree Assoc.

International Seeds, Inc.

Iowa St. Univ. of Science & Technology

Jamaica, Govt. of

Kalsec, Inc.

Kazan, Yusak

Kellogg, W.K. Company

Kentucky, University of

Kidder, Ernest

Kleberg, Robert & Helen

Krieger, Robert

Land O'Lakes, Inc.

Lansing Board of Water & Light

Lapeer, City of

Lennard, Wayne J. & Sons, Inc.

Lesco, Inc.

Lilly, Eli & Company

Lilly Research Laboratories

Lofts Pedigreed Seed, Inc.

Mallinckrodt Chemical Works

Marietta Chemicals, Martin

Massey Ferguson, Inc.

Mead Paper Co.

Meirings Greenhouses & Farms

Merck & Co., Inc.

Michigan Agricultural Coop. Marketing Assoc.

Michigan Apple Research Committee

Michigan Asparagus Research Committee

Michigan Assoc. of Nurserymen

Michigan Bean Commission

Michigan Beekeeper's Association

Michigan Biotechnology Inst.

Michigan Blueberry Growers Association

Michigan Cherry Committee

Michigan Concord Grape Production Research Fund

Michigan Council of Trout Unlimited

Michigan Dept. of Agriculture

Michigan Dept. of Commerce

Michigan Dept. of Natural Resources

Michigan Dept. of Transportation

Michigan Foundation Seed Association

Michigan Onion Committee

Michigan Package Carrot Council

Michigan Peach Sponsors

Michigan Pear Research Association

Michigan Peat Company

Michigan, State of

Michigan Sugar Co.

Michigan Turfgrass Foundation

Michigan Vegetable Council Inc.

Miles Laboratories

Mink Farmers Research Foundation

Minnesota, University of

Mint Industry Research Council



Missouri Assoc. of Nurserymen

Mobay Chemical Corp.

Mobil Chemical Co.

Monitor Sugar Co.

Monsanto Company

Montedison USA, Inc.

Moorman Manufacturing Company

MSU Foundation

MSU Horticulture Club

National Aeronautics And Space Adm.

National Ag. Products Development, Inc.

National Institutes of Health

National Livestock & Meat Breeding

National Pork Producers Council

National Science Foundation

Neogen Corp.

Netherlands Flower Bulb Inst.

New Hampshire, University of

Nitragin Co., Inc.

Nor. Am. Agricultural Products, Inc.

North Amer. Strawberry Growers Assoc.

North American Plant Breeders

North American Van Lines

North American VASA Race

Northern Mich. Cert. Seed Producers Co-Op

Nutriseed, Inc.

Oglevee Computer Systems

Ore-Ida Foods, Inc.

Oregon State University

Ovid Roller Mills, Inc.

Park, George W. Seed Co.

Pennwalt Chemical Corporation

Pfizer, Inc.

Pickle Packers International

Pioneer Hi-Bred International, Inc.

Potash & Phosphate Inst.

PPG Industries, Inc.

Quaker Oats Co.

Radcliff Materials, Inc.

Resources For The Future, Inc.

Reuter-Stokes, Inc.

Rhone-Poulenc, Inc.

Ringer Corp.

Rocheleau

Rockefeller Foundation

Rodenberry Farms Inc.

Rohm & Haas Company

Rose, Richard C.

Ruffed Grouse Society

Sawka, Melanie Reinhold

Sawyer Fruit & Vegetable Coop.

Select Embryos, Inc.

Select Sires, Inc.

Shell Development Co.

Shivvers Enterprises, Inc.

Smith Kline Corp.

Smith, Victor C.

Snell Environmental Group

Soybean Promotion Committee of Michigan

Staley Mfg. Co.

Stanton Seed & Supply Co.

Stauffer Chemical Co.

Swatini Rubber Company

Sweeney Seed Co.

Tennessee Valley Authority

Terra Chemicals Intl., Inc.

Texas A&M Research Foundation

Toyosha Co. Ltd.

Tru Green Corp.

U.S. Forest Service

U.S. Geological Survey

U.S. Golf Assoc.

Uncle Ben's, Inc.

Union Carbide Corp.

Uniroyal, Inc.

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United Agriseeds, Inc.

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United Gamefowl Breeders

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Upjohn Co., The

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Vandeventer, John W.

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Vlasic Foods, Inc.

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Wayne State University

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Western Mich. Bedding Plant Assoc.

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Westvaco Corp.

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Wisconsin, University of

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Wyeth Laboratories

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Zoecon Corp.

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Zoological Society of San Diego

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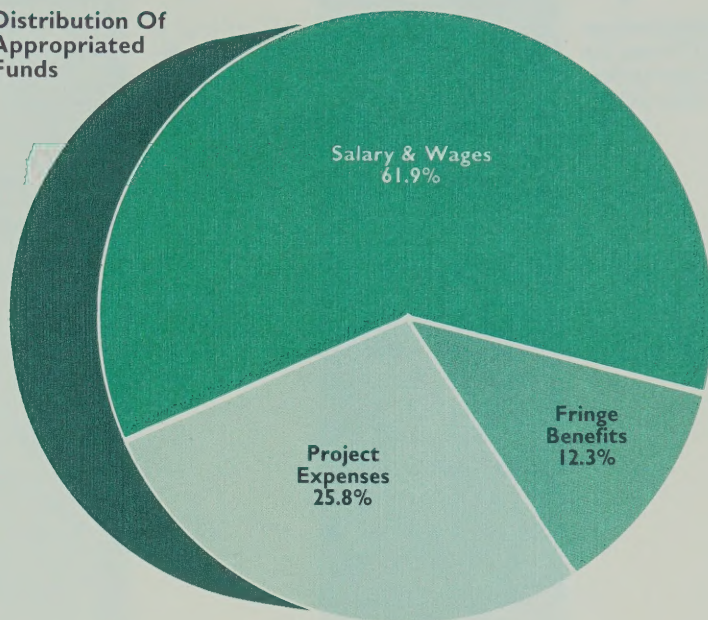
# Financial Report

July 1, 1984

to

June 30, 1985

Distribution Of Appropriated Funds



## INCOME:

### Federal Appropriations:

Hatch	\$3,430,387
McIntire Stennis	122,106
Hatch RRF	769,978
Hatch Animal Disease Research	104,930

\$4,427,401

### State Appropriations:

#### TOTAL APPROPRIATIONS:

\$15,811,150

20,238,551

### Grants—Federal, State & Private

9,486,359

\$29,724,910

## EXPENSES:

Salaries	\$12,526,368
Fringe Benefits	2,483,177
Project Expenses	5,229,006
Grants—Federal, State & Private	9,486,359

\$29,724,910

## Personnel

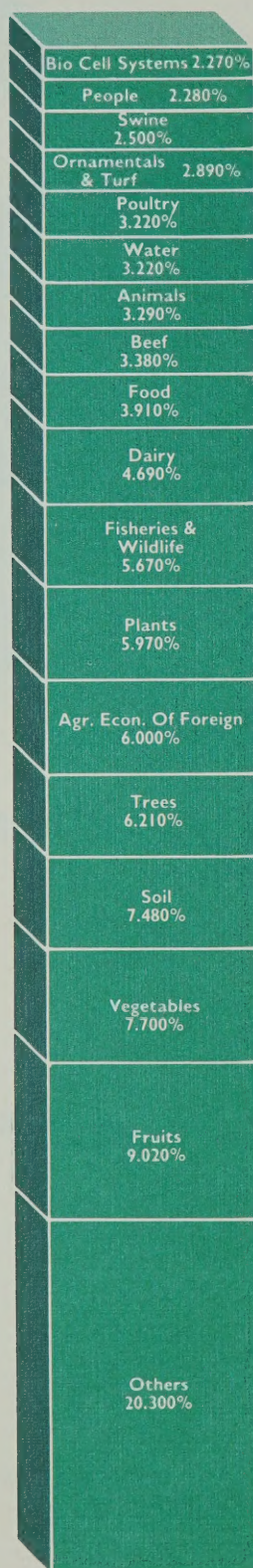
(Full-Time Equivalents)

Research Staff .....	152	Support Staff .....	146
Professors	77	Administrative Professionals	50
Associate Professors	27	Supervisors	5
Assistant Professors	31	Clerical	51
Instructors	1	Technicians	40
Research Associates and Specialists	16		

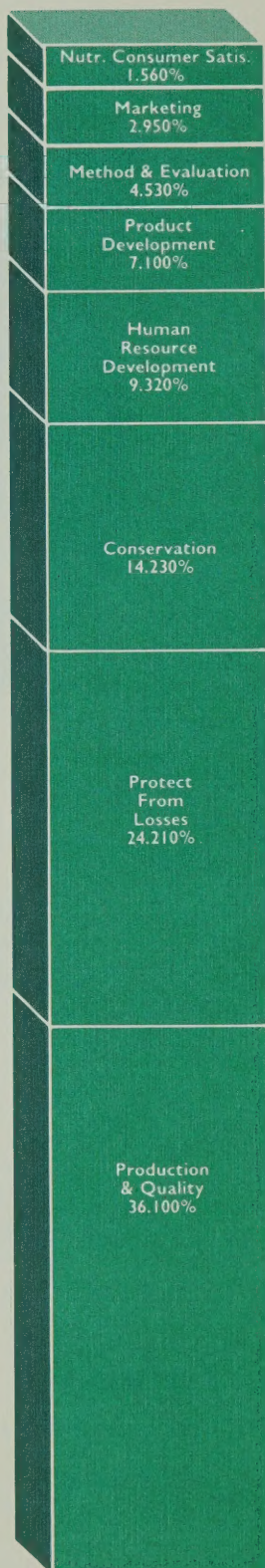




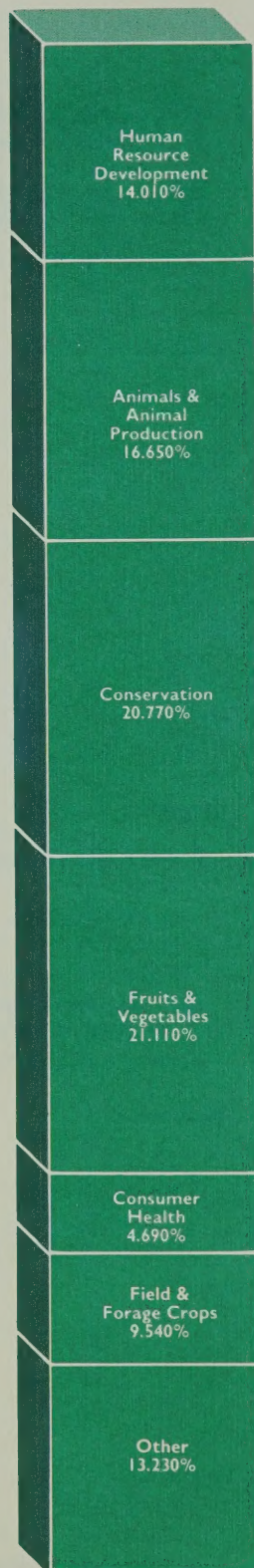
**Distribution  
Of Funds By  
Commodity  
1984-1985**



**Distribution  
Of Funds By  
Activity  
Group  
1984-1985**



**Distribution  
Of Funds By  
Area Of  
Work  
1984-1985**



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MICHIGAN STATE UNIVERSITY  
AGRICULTURAL EXPERIMENT STATION  
ANNUAL REPORT OF THE  
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**Michigan Agricultural Experiment Station**  
**Robert G. Gast, Director**  
Michigan State University  
East Lansing, Michigan 48824-1039

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300

**BULK RATE**  
**POSTAGE & FEES PAID**  
**USDA**  
**PERMIT NO. G269**